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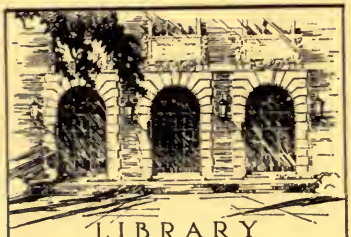

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FLORA OF THE AGUAN VALLEY AND THE COASTAL REGIONS NEAR LA CEIBA HONDURAS

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FLORA OF THE AGUAN VALLEY AND THE COASTAL REGIONS NEAR LA CEIBA HONDURAS

T. G. YUNCKER

The plants listed on the following pages were collected on the coastal plain and mountain slopes in the vicinity of La Ceiba in the Department of Atlántida, Honduras, and also in a desert-like area in the Aguán River Valley near Coyoles in the Department of Yoro from June to August, 1938 by the writer accompanied by James Koepper and Kenneth Wagner.[1]

Paul C. Standley[2] spent several months during the winter of 1927–28 studying the vegetation in the Lancetilla Valley and surrounding territory near the coastal town of Tela, which is situated approximately 75 kilometers west of La Ceiba. His publication upon that region is the only description of any importance so far made of the flora of this northern coastal plain area. Standley[3] also published in 1930 a list of woody plants occurring in the vicinity of Siguatepeque in the interior of the country in the Department of Comayagua. Professor Record[4] in 1927 published a list of the trees then known to occur in Honduras. During the summer of 1934 the writer made collections in the Lancetilla Valley region, at Potrerillos, and about Lake Yojoa, in the Department of Cortés. In the summer of 1936, in company with Ray Dawson and Howard Youse, collections were made also in the mountains in the vicinity of Siguatepeque. The results of this work were published in 1938.[5] So far as known, aside from a few small collections and the descriptions of occasional new species or short articles, no other publications have been made on the flora of Honduras.

Botanically speaking, Honduras is, therefore, one of the least known of the Central American countries, although it presents unusual opportunities for exploration. While roads suitable for automobile traffic are few, the more important cities in the interior can be reached easily by airplane. Trails are numerous, and by using

[1] See T. G. Yuncker, Notes on a semi-arid region in the Aguán River Valley Republic of Honduras, Torreya 39: 133–139. 1939.

[2] Field Mus. Bot., 10. 1931.

[3] Journ. Arnold Arb. 9, No. 1. 1930.

[4] Tropical Woods, No. 10. June, 1927.

[5] Field Mus. Bot., 17, No. 4. 1938.

mules most regions are accessible. With the exception of the coastal regions, which are generally warm and humid, the climate is pleasant and work can be carried on in comfort.

Honduras, which lies between Guatemala and Salvador on the west and Nicaragua on the southeast, is irregularly triangular in outline, with the apex at the Gulf of Fonseca on the Pacific Ocean and with the base forming the northern coast along the Caribbean Sea. The country is rough and mountainous, with the principal ranges extending in an east-west direction through the south-central part of the country. Near the northern coast a secondary range, which includes some peaks reported to be more than 2,000 meters in height, extends from the Ulúa River on the west to the town of Trujillo on the east. Between this range and the Caribbean lies a fertile coastal plain. In a few places the mountains extend to within a very short distance of the sea but elsewhere, especially where rivers occur, the plain is several kilometers wide. A number of rivers rise in the mountains of the interior and have their outlets in the Caribbean, the largest and most important of which are the Ulúa and the Aguán. Some of the smaller streams, which may be insignificant during the dry season, become torrents when there is an abundance of rain. The rich soil of the coastal plain and river valleys of the northern coast, together with the warm, humid climate, present conditions suitable for the cultivation of tropical fruits, especially bananas, and it is here that the great fruit companies have developed extensive plantations.

For the most part the coastal plain contains but little of the original vegetation. Large areas have been cleared for banana plantations, for smaller native farms (*poquiteros*), and for grazing. In preparing the land for planting bananas all the trees are cut and burned or allowed to decay where they fall. On the small native farms and elsewhere, however, one may find occasional specimens of some of the larger forest trees remaining. Plant growth is extremely rapid, and where cultivation has been discontinued the vegetation soon becomes luxuriant and often practically impenetrable. Another factor in the extermination of the forest trees is the utilization by the residents of large numbers of trees for fuel. In places native clearings (*milpas*) also have been made on the lower slopes of the mountains, but these are not numerous and are mostly small. The soil in such virgin clearings generally produces good crops for a few years, but as the fertility diminishes a new clearing is made and the old one allowed to revert to the natural state. These hillside plan-

tations secure more light for their crops because of the slope which reduces the shade from the surrounding forest.

La Ceiba is the largest town on the northern coast of Honduras and is the principal port and headquarters of the Standard Fruit Company. The coastal plain is comparatively narrow in the vicinity of La Ceiba, with the mountains forming a series of high and picturesque peaks, known locally as the Cangrejal Range. As seen from the sea, La Ceiba with its background of high and almost continually cloud-capped peaks presents a very beautiful scene. The mountains

FIG. 1. The cloud-draped peaks of the Cangrejal Range, back of La Ceiba.

rise directly from the plain with few or no foothills and with the windward or northern slopes facing the Caribbean Sea densely covered with virgin rain forest. The trees are mostly 50 to 100 feet tall, but here and there are giant trees which tower above the lower main forest canopy. Beneath the dominant upper layer occurs a dense growth of smaller trees, palms, shrubs, and lianas through which but little sunlight penetrates. Large numbers of orchids, bromeliads, cacti, and other epiphytic plants are present on the trees. The taller trees and many of the epiphytes are difficult or impossible to collect without cutting the trees which, in the case of the larger species, is usually not practicable. Occasional herbaceous plants such as peperomias, begonias, ferns, etc., together with fallen trees and other rotting debris make up the forest floor.

The denseness of the vegetation, which requires the continual use of a machete to penetrate it and the consequent impossibility of being able to see for any distance and determine directions, together with the numerous deep canyons and precipitous walls, make the ascent of the higher mountains in this region extremely difficult. It is claimed that some of the highest peaks never have been scaled. One is ordinarily able to make better progress, espe-

FIG. 2. Mountains near the village of Las Flores, Department of Yoro.

cially on the lower slopes, by following the rock-filled courses of some of the smaller streams. It is believed by aviators who fly over the range that an ascent may be more easily made from the opposite or windward side, where the vegetation is not so dense and the mountain slopes less precipitous. Doubtless many plants of considerable interest will be discovered at the higher elevations when collections are made there.

The Aguán River, which originates in the interior of the Department of Yoro, flows in a northeasterly direction to the sea through a progressively widening valley. Along the river occurs a low, flat zone of varying width, known as vega land, composed of rich soil annually inundated during the rainy season and on which bananas are now grown extensively. In some places this vega land is very narrow, but elsewhere it is wide enough to support banana plantations of considerable size. From this low region the land rises very

abruptly to a height of about 20 meters to form a flat mesa or plateau-like tableland which with gradually increasing elevation extends for several kilometers to the foothills of the adjacent mountains. On this tableland, from near Olanchito up the river to Coyoles and beyond for a number of kilometers, occurs a unique desert-like area. This region lies behind the coastal range of mountains, which prevent the clouds from the Caribbean reaching the interior with their moisture. The rainfall may be adequate here during the rainy season but in the dry season water is scarce and the vegetation becomes dry and parched. In places the people have dug irrigation ditches to provide sufficient moisture for their grazing

FIG. 3. The Salado River, about 20 km. west of La Ceiba.

lands, and the fruit company likewise is compelled to irrigate its banana plantations for part of the year.

Much of the vegetation of the tableland is characteristic of arid regions. A number of species of cacti, some of which become giant, tree-like forms 10 to 15 meters in height, are common. In places the land has been entirely cleared and converted into pasture, but in other areas scattered groves of trees, mostly leguminous, occur. In the vicinity of Coyoles there are areas where the vegetation appears to be more virgin, with large ceiba, guanacaste, and other species occurring scattered in a forest made up mostly of small trees and shrubs. Epiphytes, especially orchids, bromeliads, and cacti, are

exceptionally abundant, though the number of species does not seem to be large. Herbaceous plants are scarce, undoubtedly in part because of the arid conditions and in part because of the grazing of large numbers of animals which range at will throughout the forest. Most of the trees have a gray or light-colored bark, which together with the dry, grayish, and dusty soil and rather sparse foliage imparts a weird and ghost-like character to the landscape.

As one approaches the foothills, the composition of the vegetation gradually changes. A species of large palm is common in open,

FIG. 4. Aguán River Valley, near Olanchito.

grassy areas and several species of oaks and a pine form an open forest extending up the slopes, on whose floor grow numerous species of grasses, sedges, and other herbaceous plants. By continuing over a series of foothills, one approaches the coastal, or Cangrejal range lying back of La Ceiba, and, as viewed from a distance, the forest appears to be more open than on the windward slopes. It is likely that the summit could be reached more easily from this side, although lack of sufficient time prevented our making the attempt.

I have become deeply indebted to a number of specialists who have materially assisted in the identification and verification of the plants listed in this paper and to whom I wish to express my appreciation: Dr. S. F. Blake (Compositae); Dr. William R. Maxon (Pteridophyta); Dr. H. N. Moldenke (Verbenaceae); Mr. C. V.

Morton (*Smilax* and descriptions of new species of *Gloeospermum* and *Besleria*); Mr. Charles Schweinfurth (Orchidaceae); Dr. R. J. Seibert (Bignoniaceae); Dr. Lyman B. Smith (Bromeliaceae); Mr. J. R. Swallen (Gramineae); Dr. William Trelease (Piperaceae and *Quercus*, including the descriptions of several new species). I am especially grateful to Mr. Paul C. Standley, who identified a large number of the plants and who has also supplied descriptions of a number of new species.

I wish also to acknowledge the co-operation given by officials of the Standard Fruit Company and especially Mr. A. J. Chute, resident manager at La Ceiba, who gave much helpful advice and assistance. The entire personnel of the company was uniformly eager to be of assistance to us in our work.

LIST OF GENERA AND SPECIES

SCHIZAEACEAE

LYGODIUM Swartz

Lygodium venustum Swartz. Climbing over shrubs. Common in thickets on both windward and leeward slopes of the coastal range of mountains.

GLEICHENIACEAE

DICRANOPTERIS Bernh.

Dicranopteris bifida (Willd.) Maxon. Stems long and much branched. Overhanging the bank of a moist, shaded ravine on the lower slopes of Mt. Cangrejal. Not common.

Dicranopteris pectinata (Willd.) Underw. Associated with *D. bifida* on the bank of a ravine on the lower slopes of Mt. Cangrejal. Observed but once and apparently uncommon in this region.

HYMENOPHYLLACEAE

TRICHOMANES L.

Trichomanes Krausii Hook. & Grev. On a rock in deep, wet forest on the lower slopes of Mt. Cangrejal at about 330 meters altitude.

CYATHEACEAE

ALSOPHILA R. Br.

Alsophila blechnoides (Rich.) Hook. Leaves up to 2 meters in length. At edge of thicket on the lower slopes of Mt. Cangrejal.

Alsophila microdonta Desv. Leaves about 2 meters in length. In low, wet soil on the bank of the Salado River, west of La Ceiba.

Alsophila Schiedeana Presl. Trunk about 3 meters tall, spiny; petioles spiny and with numerous brown scales. On the bank of a mountain stream back of La Ceiba. Not common in this region.

HEMITELIA R. Br.

Hemitelia costaricensis (Klotzsch) Mett. Trunk about 6 meters tall. In moist forest on the lower slopes of Mt. Cangrejal. Not common in this region.

POLYPODIACEAE

ACROSTICHUM L.

Acrostichum daneaefolium Langsd. & Fisch. Plants large, 1 to 2 meters tall. Common in low, marshy areas on the coastal plain.

ADIANTUM L.

Adiantum latifolium Lam. In rich soil, on shaded stream bank, foothills back of La Ceiba.

Adiantum petiolatum Desv. Abundant in rich soil, shady stream bank, and side of trail in foothills back of La Ceiba.

Adiantum pulverulentum L. Leaves up to 75 cm. long. In moist thicket, foothills back of La Ceiba.

Adiantum Seemanni Hook. Pinnules up to 7 cm. long and 4.5 cm. wide. In deep, shady ravine on slope near Puente Alto, about 50 kilometers east of La Ceiba, at 250 meters altitude.

Adiantum tetraphyllum H. & B. In moist, shady ravine on foothills back of La Ceiba.

Adiantum trapeziforme L. An attractive species with leaves up to 75 cm. long. On rich soil, in shady, wet ravine in the foothills above the village of Medina.

Adiantum Wilesianum Hook. In rocky ravine of a mountain stream near Puente Alto, about 50 kilometers east of La Ceiba, at 300 meters altitude.

ANANTHACORUS Underw. & Maxon

Ananthacorus angustifolius (Swartz) C. Chr. On a rock, edge of mountain stream, slopes of Mt. Cangrejal back of La Ceiba, at 360 meters altitude.

ASPLENIUM L.

Asplenium auritum Swartz. On mossy rocks at the edge of a mountain stream, on the slopes of Mt. Cangrejal, back of La Ceiba, at 300 meters altitude.

Asplenium formosum Willd. On mossy rocks at edge of a mountain stream on the slopes of Mt. Cangrejal, back of La Ceiba.

BLECHNUM L.

Blechnum occidentale L. On shady stream bank, foothills back of La Ceiba.

BOLBITIS Schott

Bolbitis cladorrhizans (Spreng.) Ching. On the rocky bank of the Danto River, lower slopes of Mt. Cangrejal.

Bolbitis Donnell-Smithii (Christ) Ching. On moist, shady stream bank, lower slopes of Mt. Cangrejal.

CYCLOPELTIS J. Sm.

Cyclopeltis semicordata (Swartz) J. Sm. A large, coarse fern with leaves up to 1 meter in length; stipe coarsely hairy or scaly. Common in thickets on the foothills back of La Ceiba; also in a rocky ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 270 meters altitude.

DRYOPTERIS Adans.

Dryopteris angustifolia (Willd.) Urban. In thin soil, rocky edge of mountain stream on the lower slopes of Mt. Cangrejal, back of La Ceiba.

Dryopteris Ghiesbreghtii (Linden) C. Chr. On shady stream bank, foothills back of La Ceiba.

Dryopteris Jurgensenii (Fée) Maxon & Morton. Leaves up to 1 meter in length. At edge of thicket, lower slopes of Mt. Cangrejal, back of La Ceiba.

Dryopteris normalis C. Chr. Very common along streams, on mossy rocks, or in soil.

Dryopteris panamensis (Presl) C. Chr. Very common along streams, on mossy rocks, or in soil.

Dryopteris patens (Swartz) Kuntze. Leaves up to 1 meter in length. On a rocky cliff, margin of stream, back of La Ceiba.

Dryopteris resiliens Maxon. On the rocky bank of a mountain stream, back of La Ceiba.

Dryopteris serrata (Cav.) C. Chr. Plants large, with leaves up to 1 meter long. On low, wet bank of Salado River, about 20 kilometers west of La Ceiba.

Dryopteris Sprengelii (Kaulf.) Kuntze. Leaves up to 1 meter long. On shady stream bank, foothills back of La Ceiba; also in rocky ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 270 meters altitude.

Dryopteris subtetragona (Link) Maxon. In rich soil along the trail in forest on the lower slopes of Mt. Cangrejal, back of La Ceiba.

ELAPHOGLOSSUM Schott

At least three species of this genus were observed on tree trunks in deep, moist forest on the slopes of Mt. Cangrejal. Unfortunately, none were found in fruiting condition suitable for identification.

HEMIONITIS L.

Hemionitis palmata L. A low, terrestrial fern with characteristic palmately 5-lobed leaves. In rich soil, thicket on foothills back of La Ceiba. Locally abundant.

NEPHROLEPIS Schott

Nephrolepis biserrata (Swartz) Schott. Leaves up to 1 meter long. In rich, moist soil on the bank of the Salado River, about 20 kilometers west of La Ceiba.

Nephrolepis pendula (Raddi) J. Sm. Leaves narrow, 1 or more meters in length, pendent. Epiphytic on palms in open forest area near the village of Las Flores.

PITYROGRAMMA Link

Pityrogramma calomelanos (L.) Link. Very common. Leaves white-powdery on the lower surface. In thickets and on stream banks.

POLYPODIUM L.

Polypodium ciliatum Willd. Epiphytic. Sterile leaves 3 to 5 cm. long; fertile blades linear-oblong. On trees in forest on the foothills back of La Ceiba.

Polypodium costatum Kunze. On tree in forest, foothills back of La Ceiba.

Polypodium crassifolium L. Leaves about 1 meter long. Epiphytic on branch of tree on river bank, foothills back of La Ceiba.

Polypodium lycopodioides L. Creeping on trees in forest on the slopes of Mt. Cangrejal, at 300 meters altitude.

Polypodium Palmeri Maxon. Leaves oblong, up to 12 cm. in length and 4 cm. in width. Creeping on trees in forest, foothills back of La Ceiba; also on trees in semi-arid woodland near Coyoles.

Polypodium pectinatum L. On a mossy rock near the Cangrejal River back of La Ceiba; also in rich soil, bank of mountain stream near the village of Las Flores.

Polypodium percussum Cav. Leaves with narrowly attenuate apices and small, scattered scales on the lower surface. Creeping on tree trunks in forest on the slopes of Mt. Cangrejal back of La Ceiba.

Polypodium Phyllitidis L. Leaves up to 60 cm. long and 7 cm. wide. Epiphytic on tree in forest on rocky ridge back of Roma siding, about 25 kilometers east of La Ceiba, at 300 meters altitude.

Polypodium triseriale Swartz. On a rocky outcropping in open, forested area on mountain slope near the village of Las Flores, at 330 meters altitude.

PTERIDIUM Scop.

Pteridium caudatum (L.) Maxon. Leaves about 1 meter long and up to 90 cm. wide. Abundant in burned areas on mountain slope above Roma siding, about 25 kilometers east of La Ceiba.

TECTARIA Cav.

Tectaria dilacerata (Kunze) Maxon. Leaves about 1 meter long. Common along shady stream banks in foothills back of La Ceiba; also in open pine forest on rocky mountain slope above the village of Las Flores, at 330 meters altitude.

Tectaria heracleifolia (Willd.) Underw. In rich soil, moist, shady stream bank, slopes of Mt. Cangrejal back of La Ceiba; also in rocky ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

Tectaria martinicensis (Spreng.) Copel. Leaves about 1 meter long; stipe sparingly scaly at the base. In rich soil, foothills back of La Ceiba.

VITTARIA J. E. Sm.

Vittaria lineata (L.) J. E. Sm. Pendent from tree branch in forest along river bank on the foothills back of La Ceiba.

SALVINIACEAE

SALVINIA Schreb.

Salvinia rotundifolia Willd. Plants about 5 mm. in diameter. Floating on the surface of a pond near La Ceiba.

SELAGINELLACEAE

SELAGINELLA Beauv.

Selaginella cuspidata Link. On a mossy rock at edge of mountain stream, slopes of Mt. Cangrejal, back of La Ceiba.

Selaginella spp. Four or five additional species of this genus were collected, but as yet they have not been determined.

CYCADACEAE

ZAMIA L.

Zamia furfuracea L. f. Stemless and, so far as observed, with a solitary, pinnate leaf. Occasional in semi-arid woodland region near Coyoles.

PINACEAE

PINUS L.

Pinus caribaea Morelet. Trees 15 to 20 meters in height and up to 50 cm. in diameter. Associated with *Quercus* and other broad-leaved trees to form open, pine-oak forests on the leeward slopes of the coastal range.

ALISMACEAE

ECHINODORUS L. Rich.

Echinodorus macrophyllus (Kunth) Micheli. Conspicuous because of its large, more or less cordate leaves. In low, marshy areas on the coastal plain.

GRAMINEAE

ANDROPOGON L.

Andropogon bicornis L. A coarse grass 1 meter or more in height. In an open area on foothills back of La Ceiba.

CENCHRUS L.

Cenchrus echinatus L. In sandy soil on low land bordering the Aguán River in the vicinity of Coyoles.

Cenchrus pauciflorus Benth. A very common North American weed. In sand along the beach near the village of Salado, about 20 kilometers west of La Ceiba.

COIX L.

Coix Lachryma-jobi L. Not abundant in this region. A small clump found on a gravelly river bar in the foothills back of La Ceiba.

CYNODON Pers.

Cynodon Dactylon (L.) Pers. In sandy soil near La Ceiba. Frequently used as a lawn grass.

DIGITARIA Heist.

Digitaria horizontalis Willd. A common and widely distributed, weedy grass. Abundant along trails in the foothills back of La Ceiba.

ELEUSINE Gaertn.

Eleusine indica (L.) Gaertn. A common and widely distributed, weedy species. Along the trail on the lower slopes of Mt. Cangrejal, back of La Ceiba.

GYNERIUM Willd.

Gynerium sagittatum (Aubl.) Beauv. A tall, coarse grass with stems up to 6 or more meters in height. The handsome, plumose inflorescence up to 1 meter in length. Common in low, marshy ground along the Salado River, about 20 kilometers west of La Ceiba.

LASIACIS (Griseb.) Hitchc.

Lasiacis procerrima (Hack.) Hitchc. Stems coarse and up to 3 or more meters in length. In a thicket on the range above Roma siding, about 25 kilometers east of La Ceiba, at 300 meters altitude.

Lasiacis ruscifolia (HBK.) Hitchc. Stems slender, up to 2 meters in length. Scrambling over shrubs in a thicket on the lower slopes of Mt. Cangrejal.

OLYRA L.

Olyra latifolia L. Stems coarse, up to 2 meters in length; leaf blades broad, petiolate. Frequent in the foothills back of La Ceiba.

PANICUM L.

Panicum maximum Jacq. Stems up to 2 meters in height. Common in the foothills and plains about La Ceiba. Often planted for pasture.

Panicum pilosum Swartz. Common in open areas and along trails in the foothills.

Panicum polygonatum Schrad. Abundant along trails in the foothills.

Panicum trichoides Swartz. Frequent on the lower slopes of Mt. Cangrejal and on the plains.

Panicum zizanioides HBK. Occasional in open areas in the foothills near La Ceiba.

PASPALUM L.

Paspalum conjugatum Berg. A very common, weedy grass on the plains and in the foothills about La Ceiba.

Paspalum paniculatum L. Stems up to 1.5 meters in height. Common in low, marshy areas near La Ceiba.

Paspalum plicatulum Michx. A common and widely distributed species. In open places, foothills back of La Ceiba.

Paspalum virgatum L. Stems up to 2 meters in height. In low, marshy areas back of La Ceiba.

PHARUS L.

Pharus glaber HBK. Leaves broad, oblanceolate, attenuately acuminate, petiolate. In deep forest on the lower slopes of Mt. Cangrejal, back of La Ceiba.

SETARIA Beauv.

Setaria geniculata (Lam.) Beauv. An abundant and weedy species, common on the plains and in the foothills about La Ceiba.

SPOROBOLUS R. Br.

Sporobolus indicus (L.) R. Br. In open places in forest on the lower slopes of Mt. Cangrejal.

Sporobolus virginicus (L.) Kunth. In sandy soil near the beach at Salado, west of La Ceiba.

STENOTAPHRUM Trin.

Stenotaphrum secundatum (Walt.) Kuntze. Sometimes used as a lawn grass in the southern United States. In sandy soil near the beach at Salado, about 20 kilometers west of La Ceiba.

TRICHACHNE Nees

Trichachne insularis (L.) Nees. A rather coarse grass, up to 1 meter in height, with a handsome, plumose inflorescence. Common about La Ceiba; also on the bank of an irrigation canal in the Aguán River Valley near Coyoles.

CYPERACEAE

CALYPTROCARYA Nees

Calyptrocarya glomerulata (Brongn.) Urban. Flowers in small glomerules which are arranged in loose, umbel-like clusters along the stem. On stream bank, slopes of Mt. Cangrejal, at 300 meters altitude.

CYPERUS L.

Cyperus articulatus L. The spongy, nearly leafless stems up to 1 meter in height. In boggy area near the seashore, vicinity of La Ceiba.

Cyperus caracasanus Kunth. Abundant along trails and in open places on the lower slopes of Mt. Cangrejal, back of La Ceiba.

Cyperus diffusus Vahl. Common in open, wet areas about La Ceiba.

Cyperus ferax L. Rich. Very common in low areas about La Ceiba.

Cyperus Luzulae (L.) Retz. Abundant in moist soil on the lower slopes of Mt. Cangrejal.

Cyperus rotundus L. Common on sandbars in the Aguán River above Olanchito.

DICHROMENA Michx.

Dichromena ciliata Vahl. Flowers in compact heads subtended by several linear, leaf-like bracts up to 10 cm. long and white within near the base. Scattered but abundant in rocky soil in open pine forest on mountain slope at 330 meters altitude, near the village of Las Flores.

ELEOCHARIS R. Br.

Eleocharis geniculata (L.) R. Br. Stems spongy, subterete, rush-like, leafless; spikes solitary and terminal. In low, wet area on the lower slopes of Mt. Cangrejal.

Eleocharis mutata (L.) R. & S. Stems nearly leafless, three-angled. In wet, marshy area near the seashore, vicinity of La Ceiba.

FIMBRISTYLIS Vahl

Fimbristylis spadicea (L.) Vahl. Common in low, sandy areas near the beach, vicinity of La Ceiba.

KYLLINGA Rottb.

Kyllinga peruviana Lam. Common in wet, boggy areas along the seashore in the vicinity of La Ceiba.

SCLERIA Berg

Scleria pterota Presl, var. **melaleuca** (S. & C.) Standl. Frequent in the foothills and on the plains about La Ceiba.

Scleria secans (L.) Urban. Stems slender, scrambling over low shrubs in thicket on bank of stream, slopes of Mt. Cangrejal, at 200 meters altitude.

PALMAE

ASTROCARYUM Mey.

Astrocaryum mexicanum Liebm. Trunk about 3 meters tall, armed with flattened spines about 5 cm. long; spathe densely covered with needle-like spines 1–2 cm. long. In deep forest on slopes of Mt. Cangrejal, at 240 meters altitude.

CHAMAEDOREA Willd.

Chamaedorea graminifolia Wendl. Trunk smooth, slender, up to 6 meters in height; leaves pinnate, up to 2 meters in length. Bank of mountain stream, slopes of Mt. Cangrejal.

Chamaedorea Lindeniana Wendl. Trunk smooth, slender, up to 2.5 meters in height; leaves pinnate; branches of inflorescence and young fruit light orange color; fruit black when ripe. In forest on the slopes of Mt. Cangrejal; also in rocky ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 240 to 270 meters altitude.

Chamaedorea Pacaya Oerst. Trunk smooth, slender, up to 2 meters in height; leaves pinnate; branches of inflorescence orange-colored; fruit black. Frequent in forest on the slopes of Mt. Cangrejal.

FIG. 5. The manaca palm (*Orbignya Cohune*). The leaves are used commonly for thatching houses.

COCOS L.

Cocos nucifera L. Frequent on the plains near the seashore. Planted for the fruit, which is exported and also used locally for the manufacture of soap, shortening, etc.

DESMONCUS Mart.

Desmoncus chinantlensis Liebm. Stems long and slender, armed with very sharp, needle-like spines; leaves long, pinnate, the uppermost pairs of leaflets transformed into reflexed, spine-like

organs which assist the plant in scrambling in trees and over shrubs; fruit golden yellow. Because of the leaf and stem spines, it is difficult to pass through a thicket of these plants without injury. Occasional in thickets in the foothills back of La Ceiba.

GEONOMA Willd.

Geonoma binervia Oerst. Trunk smooth; leaves pinnate; peduncles red. In dense forest on the slopes of Mt. Cangrejal, at about 200 meters altitude.

ORBIGNYA Mart.

Orbignya Cohune (Mart.) Dahlgren. A fine, large palm common at lower altitudes. The huge leaves are used for thatching houses.

REINHARDTIA Liebm.

Reinhardtia gracilis (Wendl.) Burret. Stems about 1 meter tall; leaves with numerous perforations near the midrib. In dense forest on the slopes of Mt. Cangrejal, at 330 meters altitude.

Reinhardtia rostrata Burret. Stems about 60 cm. tall; leaf blades only about 15 cm. in length, perforated near the midrib; peduncles red; fruit black. Bank of mountain stream on slopes of Mt. Cangrejal.

Reinhardtia simplex (Wendl.) Burret. Stem about 75 cm. tall; leaf blades 15–20 cm. long, without midrib perforations. In a rocky ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

SYNECHANTHUS Wendl.

Synechanthus fibrosus Wendl. Trunk slender, about 3.5 meters tall; leaves pinnate; flowering stalks about 60 cm. long, pendent. In forest on the rocky ridge back of Roma, about 25 kilometers east of La Ceiba.

CYCLANTHACEAE

CARLUDOVICA R. & P.

Carludovica Oerstedii Hemsl. Abundant on stream bank in wet, rocky ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

Carludovica palmata R. & P. Stemless but with petioles up to 2 meters in length. Source of the fiber used in making "Panama"

hats. In deep forest on the bank of a mountain stream, slopes of Mt. Cangrejal, at 300 meters altitude.

CYCLANTHUS Poit.

Cyclanthus bipartitus Poit. Occasional in damp forest on the slopes back of La Ceiba.

ARACEAE

ANTHURIUM Schott

Anthurium aemulum Schott. Spadix purple; spathe greenish. On mossy rock outcropping, ridge back of Roma, about 25 kilometers east of La Ceiba, at 300 meters altitude.

Anthurium concinnatum Schott. Spadix pinkish to orange; spathe greenish white; leaves large, ovate-cordate. On a rocky cliff along a mountain stream, slopes of Mt. Cangrejal, back of La Ceiba; also on the rocky ridge back of Roma, about 25 kilometers east of La Ceiba, at 270 meters altitude.

Anthurium consobrinum Schott. Spadix white; spathe green; fruit bright red. On a log in deep, wet forest on the slopes of Mt. Cangrejal, at 360 meters altitude; also on rocks in a deep ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

Anthurium crassinervium (Jacq.) Schott. Stemless, epiphytic; leaves up to 50 cm. long or more, forming a rosette; spadix varying from dark red at the base to green at the tip; spathe dark red. Frequent on trees in semi-arid woodland near Coyoles.

Anthurium fortinense Engler. Stemless; leaves 20 cm. long or more; spadix, spathe, and petioles dull red. On a rocky outcropping, mountain slope near the village of Las Flores, at 330 meters altitude.

Anthurium myosuroides (HBK.) Endl. Spadix and spathe green; berries red. Climbing on trees in forest, foothills back of La Ceiba.

Anthurium scandens (Aubl.) Engler. Spadix and spathe greenish; fruit white. Climbing on trees near the bank of a mountain stream, slopes of Mt. Cangrejal, at 180 meters altitude.

Anthurium scolopendrinum (Ham.) Kunth. Spadix, spathe, and peduncles dull red; berries bright red. On a tree near the Cangrejal River, back of La Ceiba; also on a rock in open forest on mountain slope near the village of Las Flores, at 330 meters altitude.

DIEFFENBACHIA Schott

Dieffenbachia Oerstedii Schott. About 60 cm. tall; leaf blades about 20 cm. long; spathe orange, enclosing the bright red berries. In rich soil, bank of river in deep forest on the lower slopes of Mt. Cangrejal.

Dieffenbachia seguina (L.) Schott. Plants about 1 meter tall; leaf blades much larger than those of the preceding species; spathe greenish, enclosing the bright red fruit. In rich soil on the bank of a stream, lower slopes of Mt. Cangrejal; also on banks of stream in a rocky ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

Both species emit a vile odor and, because of the presence of needle-like crystals in the cells, produce a paralyzing effect on the mouth parts when portions of the plants are chewed.

PHILODENDRON Schott

Philodendron guttiferum Kunth. Epiphytic vine. Spathe green, nearly enclosing the spadix; petioles conspicuously winged. Frequent in forest on the mountain slopes about La Ceiba.

Philodendron oxycardium Schott. Epiphytic vine. Spathe green; leaves ovate-cordate. On tree in the semi-arid woodland near Coyoles.

Philodendron Popenoei Standl. & Steyerm., sp. nov.—Caudex scandens teres 6–8 mm. crassus, internodiis usque 7.5 cm. longis; petiolus 12–22 cm. longus gracilis, vagina insigniter angusta 3–10 cm. infra basin laminae desinente viridi; lamina in sicco fere membranacea ovata vel oblongo-ovata 16–33 cm. longa 13–20 cm. lata, apice breviter apiculata, basi subcordata vel breviter cordata, lobis posticis brevibus late rotundatis, nervis primariis utroque latere ca. 8–9 inter sese 2–3 cm. distantibus angulo lato saepe fere recto abeuntibus teneribus sed conspicuis, secundariis tertiariisque numerosissimis tenerrimis; pedunculus teres crassus 3.5–4 cm. longus; spathae virides 12 cm. longae 2 cm. crassae, tubo angusto, lamina ovato-oblonga acuminata; spadix tenuis anguste cylindroideus apicem versus angustatus longiuscule stipitatus, inflorescentia feminea 3 cm. longa 1 cm. crassa, mascula 5 cm. longa; pistilla columnaria vix ultra 2 mm. longa.—Honduras: Lancetilla Valley, near Tela, Dept. Atlántida, alt. 600 meters or less, 1927–28, *Paul C. Standley* 52625 (type in Herb. Field Mus.); also No. 54390. Hills above Lancetilla, 45 meters, *Yuncker* 4730, 4931. In forest

of foothills back of La Ceiba, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8769.—Guatemala: Near Entre Ríos, Dept. Izabal, 18 meters, *Standley* 72760.

In the *Flora of the Lancetilla Valley* this plant was reported incorrectly as *P. Hoffmannii* Schott, a quite different species. *P. Popenoei* is related actually to *P. guatemalense* Engler, which it much resembles in general appearance. In that, however, the leaves are rounded or obtuse at the base, and the more conspicuous leaf sheath is continued almost to the base of the blade.

The new species is named for Dr. Wilson Popenoe, to whom the authors of this species are greatly indebted for many favors in connection with their field work in Honduras and Guatemala.

Philodendron radiatum Schott. Epiphytic vine. Spathe green; leaves deeply pinnate-lobed. On a tree in ravine in semi-arid upland near the village of Medina.

PISTIA L.

Pistia Stratiotes L. A curious member of this family, with spongy leaves 7 to 10 cm. long, forming rosettes; inflorescence very inconspicuous. On mud banks and floating in shallow pools in swampy areas along the Aguán River.

SPATHIPHYLLUM Schott

Spathiphyllum Friedrichsthalii Schott. Terrestrial. Spadix greenish; spathe very large, flat, green. In rich soil in thicket, foothills back of La Ceiba.

SYNGONIUM Schott

Syngonium podophyllum Schott. Epiphytic vine. Spathe red when mature. Leaves divided into narrow segments. Common on the plains and lower foothills about La Ceiba.

BROMELIACEAE

AECHMEA R. & P.

Aechmea bracteata (Swartz) Griseb. Flowers yellow; bracts bright red. A large, conspicuous plant, growing either on the ground or as an epiphyte. Abundant in the semi-arid woodland region near Coyoles.

Aechmea Kienastii E. Morr. Leaves moderately thin, purple at the base; peduncle about 75 cm. long, the flower-bearing part

about 30 cm. long; flower-bearing branches and bracts bright red. On trees in deep forest on the slopes of Mt. Cangrejal, at 300 meters altitude. Not common.

BROMELIA L.

Bromelia sylvestris Willd. Leaves up to 1.5 meters in length, armed with sharp, curved, marginal teeth, some leaves red; flower stalk 30–35 cm. tall; flowers light purple, the immediate bracts red. Frequent in dry soil in the semi-arid woodland regions near Coyoles.

CATOPSIS Griseb.

Catopsis apicroides (Schlecht. & Cham.) Baker. On trees in deep forest on the slopes of Mt. Cangrejal, at 330 meters altitude.

Catopsis Morreniana Mez. On trees in deep, wet forest on the slopes of Mt. Cangrejal, at 360 meters altitude.

PITCAIRNIA L'Hér.

Pitcairnia sp. An unidentified species with leaves up to 1 meter in length and flowering stalk 75 cm. long. Growing among rocks on bank of a stream on the lower slopes of Mt. Cangrejal.

TILLANDSIA L.

Tillandsia Balbisiana Schult. Leaves 30 cm. long or more, very slender, twisted. On trees along the margin of the Aguán River near Coyoles.

Tillandsia brachycaulos Schlecht. Flowers blue, with deep blue stamens; leaves red on the upper surface, green toward the base. A handsome plant. On trees in the semi-arid woodland region near Coyoles.

Tillandsia Caput-Medusae E. Morr. On trees in the foothills back of La Ceiba.

Tillandsia fasciculata Swartz. Leaves 45 cm. long or more, very slender; bracts light tan. On trees in semi-arid woodland region near Coyoles.

Tillandsia festucoides Brongn. Leaves 25 cm. long or more, very slender. On trees in deep forest on the slopes of Mt. Cangrejal, at 300 meters altitude. Frequent.

Tillandsia filifolia Schlecht. & Cham. Plants about 20 cm. tall; leaves slender, filiform. On trees in deep, wet forest on the slopes of Mt. Cangrejal, at 300 meters altitude.

Tillandsia Schiedeana Steud. Plants small, clustered; leaves 10 to 15 cm. long, filiform. On trees in deep, wet forest on the slopes of Mt. Cangrejal, at 330 meters altitude.

Tillandsia usneoides L. Abundant on pines and other trees in open forest on the slopes above the village of Las Flores, at 300 meters altitude.

Tillandsia utriculata L. Leaves 50 cm. long or more, 7 cm. wide or more at the base, constricted above into a slender apex, clustered at the base of the stem to form a large rosette; flowering stalk 1.5 meters tall, loosely and widely branching, the branches rich purple. On trees in forest on the foothills back of La Ceiba.

Tillandsia Valenzuelana A. Rich. Leaves up to 60 cm. or more in length, apically slender; flowers purple; bracts scarlet. A very handsome plant. On trees in the semi-arid woodland region near Coyoles.

VRIESIA Lindl.

Vriesia heliconioides (HBK.) Hook. Bracts bright red, with green tips. On trees in wet forest on the slopes of Mt. Cangrejal.

COMMELINACEAE

CAMPELIA L. Rich.

Campelia Zanonia (L.) HBK. Herb. Flowers white; fruit purple. In the rocky bed of a small mountain stream near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

COMMELINA L.

Commelina elegans HBK. Herb. Flowers pale blue to deep blue. Common in wet areas about La Ceiba; also on sandbars in the Aguán River near Coyoles.

DICHORISANDRA Mikan

Dichorisandra hexandra (Aubl.) Standl. Herb. Stems long and vine-like. Corolla blue in the center, the petals edged with white. Scrambling over shrubs in thicket in a ravine near Puente Alto, about 50 kilometers east of La Ceiba; also on a rocky outcropping on the mountain side above Roma, about 25 kilometers east of La Ceiba.

PONTEDERIACEAE

EICHHORNIA Kunth

Eichhornia azurea (Swartz) Kunth. Floating in a marsh near the seashore, vicinity of La Ceiba.

HETERANTHERA R. & P.

Heteranthera reniformis R. & P. Herb. Flowers white. Creeping in muddy soil along the trail in foothills back of La Ceiba.

PONTEDERIA L.

Pontederia cordata L. Stems 90 cm. or more in height; flowers purplish. In marshy area along the seashore near La Ceiba.

LILIACEAE

DRACAENA L.

Dracaena americana D. Sm. Tree about 6 meters tall; leaves narrow, numerous. In open forest on the rocky mountain slope back of Roma, about 25 kilometers east of La Ceiba, at 240 meters altitude. A conspicuous plant.

SMILACACEAE

SMILAX L.

Smilax Lundellii Killip & Morton. New to Honduras. Woody vine, climbing in trees along the wooded border of the Aguán River, near Coyoles.

Smilax mollis H. & B. Woody vine, climbing in thickets on foothills back of La Ceiba; also in semi-arid woodland near Coyoles.

Smilax munda Killip & Morton. New to Honduras. Woody vine, climbing in thickets near the shore of the Salado River, about 20 kilometers west of La Ceiba.

Smilax spinosa Mill. Woody vine, climbing in thickets on foothills back of La Ceiba.

HAEMODORACEAE

XIPHIDIUM Aubl.

Xiphidium caeruleum Aubl. Herb, about 1 meter tall. Flowers small, white; berries red. In rich soil, wet forest on the slopes of Mt. Cangrejal.

AMARYLLIDACEAE

AGAVE L.

Agave sp. Occasional plants of a sterile, unidentified species were observed in the semi-arid woodland region near Coyoles.

CRINUM L.

Crinum cruentum Ker. Flowers white; stamens with green filaments and orange anthers. A showy and decorative plant. Abundant locally in wet areas on the plains about La Ceiba.

CURCULIGO Gaertn.

Curculigo scorzoneraefolia (Lam.) Baker. Low herb with yellow flowers. In grass in open, forested area on mountain slopes near Las Flores, at 330 meters altitude.

HYPOXIS L.

Hypoxis decumbens L. Low herb with yellow flowers. In grass in open, forested area on mountain slopes near Las Flores, at 330 meters altitude, associated with the preceding species.

DIOSCOREACEAE

DIOSCOREA L.

Dioscorea Koepperi Standl., sp. nov.—Gracillima volubilis ubique glaberrima, caulibus teretibus ca. 1 mm. crassis, internodiis valde elongatis; folia mediocria petiolata tenuia in sicco olivacea, petiolo gracillimo ca. 2 cm. longo; lamina anguste lanceolato-oblonga ca. 11 cm. longa atque 3 cm. lata longiacuminata, basi profunde (ca. 1 cm.) cordata, sinu lato, lobis posticis obtusis, supra sublucida, venis prominulis, subtus lucida, trinervia, nervis 2 utroque latere vulgo supra basin nascentibus, venis laxe reticulatis prominentibus; racemi masculi axillares singuli plerumque 15–25 cm. longi, rhachi flexuosa angulata, spiculis numerosis solitariis pauci- vel multifloris usque 1 cm. longis sed vulgo brevioribus, bracteis viridescentibus triangulari-ovatis floribus brevioribus acutis carinatis, floribus dense aggregatis sessilibus; perianthii segmenta ovalia pallida tenuia subhyalina obtusa fere 1.5 mm. longa; stamina 6.—Honduras: Climbing in thicket, near Río Danto, lower slopes of Mt. Cangrejal, near La Ceiba, Dept. Atlántida, July 16, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8482 (type in Herb. Field Mus.).

The leaves are distinctive in form, being long and narrow, with almost parallel sides, the basal lobes short, directed downward, and rounded-triangular in shape in the well developed leaves.

Dioscorea macrostachya Benth. Herbaceous vine. Fruit 2.5 cm. long or more, abundant, in large clusters. Climbing high in trees, edge of forest on the foothills back of La Ceiba.

MUSACEAE

HELICONIA L.

Heliconia Bihai L. Inflorescence erect; bracts yellow or somewhat reddish, short and broad. On the bank of the Salado River, 20 kilometers west of La Ceiba, and elsewhere in low, wet areas.

Heliconia crassa Griggs. Stems 1 to 1.5 meters tall, leafy to the top; leaves relatively small; corolla yellowish; bracts few, bright red or somewhat orange; berries blue. In wet thicket on the lower slopes of Mt. Cangrejal; also in a rocky ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

Heliconia elegans Peters. Plants about 3.5 meters tall. Inflorescence dense, 30 cm. long or more; bracts red, short and broad, strongly compressed, equitant and two-ranked. On slopes near Puente Alto, about 50 kilometers east of La Ceiba, at 270 meters.

Heliconia latispatha Benth. Plants 2 meters tall. Inflorescence erect; bracts yellow, long and slender, becoming shorter toward the summit. Frequent in low, wet areas about La Ceiba.

Heliconia librata Griggs. About 2 meters tall. Bracts yellow. In rich soil on mountain slopes near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

Heliconia revoluta Griggs? About 2.5 meters tall. Inflorescence pendent; flowers yellow; bracts bright red, spreading, long and slender. The handsomest species seen. In a rocky ravine on slopes near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude; also along the Cangrejal River, back of La Ceiba.

ZINGIBERACEAE

COSTUS L.

Costus sanguineus D. Sm. Plants about 2 meters tall. Spikes terete, up to 30 cm. or more in length; bracts closely imbricate, reddish. Common in thickets about La Ceiba.

HEDYCHIUM Koen.

Hedychium coronarium Koen. Herb, about 1 meter tall; flowers white. In wet area at edge of thicket, plains west of La Ceiba. Naturalized(?).

RENEALMIA L. f.

Renealmia aromatica (Aubl.) Griseb. Herbaceous, up to 2 meters in height; inflorescence basal; flowers and fruit red. Fruit said to be edible. In low, wet soil on the banks of the Salado River, about 20 kilometers west of La Ceiba; also on the bank of a stream near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

CANNACEAE

CANNA L.

Canna indica L. Herb, about 1 meter tall or less; flowers bright red. In swampy area about La Ceiba.

MARANTACEAE

CALATHEA Meyer

Calathea altissima Koern. Plants herbaceous, about 2 meters tall. Inflorescence subglobose; flowers cream; bracts straw-colored. In thickets on the foothills back of La Ceiba.

Calathea insignis Peters. Plants 2 to 2.5 meters tall. Spikes up to 15 cm. long, strongly compressed; bracts broad, two-ranked, equitant, straw-colored or somewhat greenish. In a rocky ravine on the slopes near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

Calathea lutea (Aubl.) Mey. Plants about 1 meter tall. Spikes not compressed; bracts broad, bronze-red, equitant. In thicket at the edge of the Salado River, about 20 kilometers west of La Ceiba.

Calathea macrosepala Schum. Herb about 1 meter tall. Flowers creamy white. In rich soil, thickets on the lower slopes of Mt. Cangrejal.

Calathea micans (Math.) Koern. Herb about 45 cm. tall; inflorescence mostly less than 2.5 cm. long. In rich, wet soil, edge of stream in foothills back of La Ceiba.

MARANTA L.

Maranta arundinacea L. Herb, up to 2.5 meters tall. Flowers white. In thicket on bank of stream, slopes near Las Flores, at 300

meters altitude; also on bank of river in foothills back of La Ceiba. Sometimes cultivated for the roots, which are a source of starch.

MYROSMA L. f.

Myrosma guapilensis D. Sm. Herb, about 1 meter tall. In moist thicket on foothills back of La Ceiba.

PLEIOSTACHYA Schum.

Pleiostachya pruinosa (Regel) Schum. Herb, about 1 meter tall. In thickets at edge of forest on the lower slopes of Mt. Cangrejal.

THALIA L.

Thalia geniculata L. Herb, about 3 meters tall. Leaf blades up to 1 meter long; inflorescence loose; peduncles zigzag; flowers blue with a yellow throat. Frequent in low, marshy areas about La Ceiba.

ORCHIDACEAE

CAMPYLOCENTRUM Benth.

Campylocentrum micranthum (Lindl.) Rolfe. Flowers small, white. On trees in forest on the slopes of Mt. Cangrejal, at 150 meters altitude.

CRYPTARRHENA R. Br.

Cryptarrhena lunata R. Br. On branches of trees in wet forest on the slopes of Mt. Cangrejal, at 300 meters altitude.

DICHAEA L.

Dichaea muricata Lindl. Epiphytic. Stems long, pendent from tree branches; flowers yellowish orange. In deep forest on the slopes of Mt. Cangrejal, at 300 meters altitude.

EPIDENDRUM L.

Epidendrum alatum Batem. Leaves about 45 cm. long; inflorescence about 1 meter long or less, loosely branching; flowers brownish yellow; lip with brown lines. A handsome plant. On trees in open forest in semi-arid upland near the village of Las Flores, at 330 meters altitude.

Epidendrum cochleatum L. Epiphytic. Lip greenish purple with yellow stripes, the other perianth parts yellowish green. On

trees in deep forest on rocky ridge back of Roma, about 25 kilometers east of La Ceiba, at 360 meters altitude.

Epidendrum imatophyllum Lindl. Flowers lavender. On trees in forest on the lower slopes of Mt. Cangrejal.

Epidendrum nocturnum Jacq. On rocks in open pine forest on the slope above the village of Las Flores, at 300 meters altitude.

Epidendrum paleaceum (Lindl.) Rchb. f. With only one leaf on a stem. On trees in deep forest on the slopes of Mt. Cangrejal, at 300 meters altitude.

Epidendrum xipheres Rchb. f. Epiphytic, with pseudobulbs. Leaves solitary on each stem; flowers yellow; fruit slender, densely covered with short, spinose projections. Abundant in semi-arid woodland region near Coyoles.

LEPANTHES Swartz

Lepanthes inaequiloba Ames & Schweinf. A small epiphyte. Calyx yellowish green; corolla yellowish orange. On trees in deep forest on the slopes of Mt. Cangrejal, at 330 meters altitude.

MAXILLARIA R. & P.

Maxillaria uncata Lindl. A small epiphyte with linear leaves and purplish flowers. On trees in deep forest on the slopes of Mt. Cangrejal, at 240 meters altitude.

ONCIDIUM Swartz

Oncidium Lindenii Brongn. Lip dark red; throat yellowish. On trees in open forest on mountain slope near Las Flores, at 330 meters altitude.

ORNITHOCEPHALUS Hook.

Ornithocephalus bicornis Lindl.(?). Small epiphyte with equitant leaves spreading fan-wise. On branches of trees on bank of stream on slopes of Mt. Cangrejal.

PLEUROTHALLIS R. Br.

Pleurothallis Brighamii S. Wats. Small epiphyte. Outer lobes of flower yellowish green striped with maroon; throat maroon. On branches of trees in deep forest on the slopes of Mt. Cangrejal, at 330 meters altitude.

POLYSTACHYA Hook.

Polystachya minor Fawc. & Rendle. On mossy rocks, margin of stream on the slopes of Mt. Cangrejal, at 330 meters altitude.

SCAPHOSEPALUM Pfitz.

Scaphosepalum Standleyi Ames. A small epiphyte. Flowers purplish green. On branches of trees in deep forest on the slopes of Mt. Cangrejal, at 330 meters altitude.

SCHOMBURGKIA Lindl.

Schomburgkia tibicinis Batem. A large, handsome epiphyte. Inflorescence nearly 1 meter tall, branching; floral parts burnt-orange; lip whitish yellow. On trees at edge of the Salado River, about 20 kilometers west of La Ceiba.

STELIS Swartz

Stelis ciliaris Lindl. A small epiphyte with maroon flowers. On branches of trees in deep forest on the slopes of Mt. Cangrejal, at 240 meters altitude.

Stelis purpurascens Rich. & Gal. On trees in deep forest on the slopes of Mt. Cangrejal, at 270 meters altitude.

VANILLA Swartz

Vanilla Pfaviana Rchb. f.(?). Climbing on trees in thickets on the banks of the Salado River, about 20 kilometers west of La Ceiba.

PIPERACEAE

PEPEROMIA R. & P.

Peperomia cangrejalana Trelease, sp. nov.—Herba modica late repens terrestris, caulibus erectis foliosis, 2–3 mm. crassis; folia alterna elliptica vel oblanceolato-elliptica vulgo emarginata, basi acuta, 5–7 cm. longa 2.5–3.5 cm. lata, pinnatinervia, in sicco chartacea, petiolo ca. 2 cm. longo; spicae terminales vel sympodiales solitariae ramulum 1-bracteatum 15 mm. longum terminantes, in statu juvenili graciles vix 40 mm. longae, pedunculo 5–10 mm. longo. —Honduras: Lower slopes of Mt. Cangrejal, near La Ceiba, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8765 (type in herb. Univ. Illinois).

Peperomia dantoana Trelease, sp. nov.—Herba majuscula late repens plus minusve divaricato-furcata glabra truncicola, caule 3 mm. crasso; folia late elliptica ad sublanceolata acute acuminata, basi subcordulato-acuta, 5–7 cm. longa 3–3.5 cm. lata, in sicco opaca, coriacea, 1-nervia, nervis lateralibus obsoletis, petiolo 1 cm. longo;

spicae geminatae ramulum brevissimum terminalem terminantes, filiformes 60–70 mm. longae, pedunculo 5 mm. longo.—Honduras: Río Danto, Mt. Cangrejal, near La Ceiba, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8499 (type in herb. Univ. Illinois).

Peperomia floresensis Trelease, sp. nov.—Herba patens arboricola, caule transiente minute pubescente 3–4 mm. crasso; folia alterna late lanceolata vel subelliptico-lanceolata sensim acuto-acuminata, basi acuta, 9–11 cm. longa 3–4.5 cm. lata, pinnatinervia, supra laxe araneosa, petiolo 2.5–5.5 cm. longo; spicae 1–2 ramulum brevem terminalem terminantes 70–100 mm. longae 1–5 mm. crassae, pedunculo 15 mm. longo; baccae oblongae oblique acuto-scutellatae, stigmate centrali.—Honduras: Las Flores, Dept. Yoro, alt. 270 meters, *Yuncker, Koepper & Wagner* 8149 (type in herb. Univ. Illinois).

Peperomia Koepperi Trelease, sp. nov.—Herba parva repenti-patens arboricola, caule filiformi glabrato; folia alterna elliptico-subobovata obtusa, basi acuta, ca. 6 mm. longa atque 3 mm. lata, in sicco tenuia sed opaca et vix obvie nervata glabra, petiolo 1–3 mm. longo; spicae terminales vix 10 mm. longae atque 1 mm. crassae, pedunculo brevissimo.—Honduras: Mt. Cangrejal, Dept. Atlántida, alt. 300 meters, *Yuncker, Koepper & Wagner* 8508 (type in herb. Univ. Illinois). Also, at a lower elevation, near Río Danto, No. 8380.

Peperomia lenticularis Dahlst. Stems slender; leaves orbicular, less than 1 cm. broad. Creeping on trees in forest, foothills back of La Ceiba; also on trees in forest near Las Flores, at 180 meters altitude.

Peperomia rio-cangrejalensis Trelease, sp. nov.—Herba magna dependens glabra arboricola, caule 2–3 mm. crasso; folia alterna elliptica subcaudata, basi subacuta, 10 cm. longa 4 cm. lata, inferne obscure submultiplinervia, petiolo 1–2 cm. longo; spicae singulae vel geminatae ramulum brevem terminalem terminantes 80–90 mm. longae 3 mm. crassae, pedunculo gracili 20 mm. longo; baccae oblongae acute scutulatae, stigmate centrali.—Honduras: Río Cangrejal, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8018 (type in herb. Univ. Illinois). Also No. 8794.

Peperomia romaensis Trelease, sp. nov.—Herba majuscula repenti-erecta simplex glabra, caule 2–4 mm. crasso; folia alterna rotundato-obovata obtusa, basi cuneata, 9–11 cm. longa 6–7 cm. lata tenuiter pinnatinervia, in sicco opaca coriacea subrevoluta, petiolo 2 cm. longo; spicae geminatae ramulum terminalem bibrac-

teatum terminantes graciles 150 mm. longae, pedunculo roseo gracili 3 mm. longo.—Honduras: Roma railroad siding, 25 km. east of La Ceiba, Dept. Atlántida, alt. 360 meters, *Yuncker, Koepper & Wagner* 8585 (type in herb. Univ. Illinois).

Peperomia rubefacta Trelease, var. **cangrejalana** Trelease, var. nov.—Quam species minus obvie glanduloso-granulosa, caule valde sulcato-alato.—Honduras: Mt. Cangrejal, Dept. Atlántida, alt. 330 meters, *Yuncker, Koepper & Wagner* 8737 (type in herb. Univ. Illinois). Also, at 360 meters, No. 8775.

Peperomia rubefacta Trelease, var. **reducta** Trelease, var. nov.—Planta minor, caule graciliore, foliis angustius lanceolatis vix 3–4 cm. longis atque 1 cm. latis.—Honduras: Mt. Cangrejal, Dept. Atlántida, alt. 300–330 meters, *Yuncker, Koepper & Wagner* 8736 (type in herb. Univ. Illinois). Also Nos. 8735 and 8510.

Peperomia tremulaeformis Trelease, sp. nov.—Herba late repens, caulibus gracilibus; folia alterna rotundato-ovata vel triangulari-ovata acuminata, basi subtruncata vel subacuta, 2–3 cm. longa 1.5 cm. lata, trinervia vel saepius 5-nervia, supra aliquot tomentulosa atque fuscescens, subtus flavescens atque glabra, petiolo filiformi 1–2 cm. longo; spicae 15–20 mm. longae 1 mm. crassae, pedunculo filiformi ca. 15 mm. longo; baccae oblongae rostratae, stigmate anteriori ad basin rostri inserto.—Honduras: Río Danto, Mt. Cangrejal, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8722 (type in herb. Univ. Illinois).

Peperomia Wagneri Trelease, sp. nov.—Herba majuscula caespitosa glabra epiphytica, caule 5 mm. crasso in sicco anguloso lucido-ochraceo; folia inferne opposita superne ternata rhombico-elliptica vel subobovata obtusa vel saepius obtuse longiacuminata, basi acuta, 3–4 cm. longa 2–3 cm. lata, vix plus quam uninervia, in sicco coriacea, petiolo 5–10 mm. longo; spicae terminales 80 mm. longae 2 mm. crassae, pedunculo gracili 2 cm. longo; baccae rotundato-ovoideae pseudocupula auctae acutatae, stigmate apicali.—Honduras: Coyoles, Dept. Yoro, *Yuncker, Koepper & Wagner* 8127 (type in herb. Univ. Illinois). Also No. 8055.

PIPER L.

Piper atrichopus Trelease, var. **arborescens** Trelease, var. nov.—Arbuscula(?) glabra 3-metralis; folia plerumque basi inaequilateralia, petiolo gracili ca. 1 cm. longo; spicae usque 65 mm. longae atque 3 mm. crassae, pedunculo 5 mm. longo.—Honduras: Roma siding, about 25 km. east of La Ceiba, Dept. Atlántida, alt.

300 meters, *Yuncker, Koepper & Wagner* 8578 (type in herb. Univ. Illinois).

Piper auritilaminum Trelease, sp. nov.—Arborescens trimetralis, trunco 5 cm. diam., nervis venisque foliorum juvenilium minute puberulis exceptis glabra; folia elliptica subacuta, basi oblique auriculata, latere longiore petiolo longiore, 4 cm. longa 2.3 cm. lata e 2 tertiis inferioribus submultiplinervia, petiolo 6+2 cm. longo alato; spicae valde curvatae ca. 150 mm. longae 3 mm. crassae,

FIG. 6. A large-leaved Piper (*Piper auritum*).

pedunculo 4 cm. longo.—Honduras: Lower slopes of Mt. Cangrejal, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8263 (type in herb. Univ. Illinois).

Piper auritilimbum Trelease, sp. nov.—Arbuscula 5-metralis foliis saltem in statu juvenili minute pubescentibus superne sparse pubescentibus exceptis glabra, foliorum nervis subtus hirtello-pubescentibus; folia elliptico-subovata valde acuta, basi oblique auriculata, ca. 30 cm. longa atque 15 cm. lata, e tertio superiore submultiplinervia, petiolo 4+2 cm. longo alato; spicae rectae usque ad 220 mm. longae atque 5 mm. crassae, pedunculo 6 cm. longo.—Honduras: Río Danto, Mt. Cangrejal, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8763 (type in herb. Univ. Illinois).

Piper calvescens Trelease, var. **aguanum** Trelease, var. nov. —Subarborescens sed vix trimetralis; folia rotundata vel rotundato-elliptica, inferiora 10–15 cm. longa 9 cm. lata, superiora lanceolata 4–5 cm. lata; spicae 100 mm. longae.—Honduras: Río Aguán, below Coyoles, Dept. Yoro, *Yuncker, Koepper & Wagner* 8124 (type in herb. Univ. Illinois).

Piper calvescens Trelease var. **cangrejalense** Trelease, var. nov.—Arbuscula 3–4-metralis, petiolis nervisque foliorum juvenilium sparse pubescentibus exceptis glabra; folia rotundato-elliptica acute acuminata, basi obtusa vel subobtusa 10 cm. longa 6 cm. lata 5–7-nervia; spicae 50 mm. longae 5 mm. crassae, pedunculo 5 mm. longo sparse pubescente.—Honduras: Mt. Cangrejal, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8464 (type in herb. Univ. Illinois).

Piper coyolesense Trelease, sp. nov.—Subarborescens vix 3 m. alta ubique molliter tomentulosa, internodiis superioribus modice brevibus crassisque; folia subrhombea aliquanto acuminata, basi inaequaliter obtusa, 17 cm. longa 9 cm. lata e medio inferiore pinnatinervia, nervis 5×6 venis transversis connexis, petiolo ca. 10 mm. longo; spicae ca. 70 mm. longae atque 3 mm. crassae, pedunculo vix 5 mm. longo.—Honduras: Near Las Flores, Río Aguán, Dept. Yoro, alt. 270 meters, *Yuncker, Koepper & Wagner* 8147 (type in herb. Univ. Illinois).

Piper crassicaule Trelease, sp. nov.—Arbor glabra 7-metralis, trunco 12 cm. diam., internodiis brevibus graciliusculis; folia elliptica vel suboblonga acuminata, basi inaequilateraliter acuta, latere altero ad basin petioli decurrente, 16–18 cm. longa 5–7 cm. lata ubique pinnatinervia, in sicco papyracea caerulescentia, petiolo 1.5–2 cm. longo latere longiore ad basin alato, basi laminae appendice 2–3 mm. longo aucta; spicae 125 mm. longae 2 mm. crassae, pedunculo 5–10 mm. longo.—Honduras: Ridge near Roma railroad siding, about 25 km. east of La Ceiba, Dept. Atlántida, alt. 240 meters, *Yuncker, Koepper & Wagner* 8572 (type in herb. Univ. Illinois).

Piper elasmophyllum Trelease, sp. nov.—Arborescens trimetralis, foliis eis *P. dilatati* similibus, internodiis gracilibus cito elongatis transiente molliter pubescentibus; folia plus minusve rhombico-subovato-elliptica subacuminata, basi inaequaliter cordulata 13–16 cm. longa 7–9 cm. lata, e medio inferiore pinnatinervia, nervis 5×6, transiente molliter pubescentia, nervis subtus similiter pubescentibus, petiolo 10–20 mm. longo; spicae 40 mm. longae 2 mm. crassae, pedunculo 5 mm. longo, bracteis triangulari-subpeltatis

pubescentibus; baccae obtuse triquetrae.—Honduras: Lower slopes of Mt. Cangrejal, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8461 (type in herb. Univ. Illinois).

Piper evulsipilosum Trelease, sp. nov.—Frutex vix trimetralis, internodiis molliter pilosis; folia elliptica subacuminata, basi aliquanto inaequaliter obtusa, 18–20 cm. longa 7–9.5 cm. lata, e 2 tertiis inferioribus pinnatinervia, nervis ca. 4×2, supra lucida intense viridia, subtus pallida opaca, nervis venisque hirtellis, petiolo 5–10 mm. longo alato plus minusve piloso; spicae 60 mm. longae 5 mm. crassae apiculatae, pedunculo 10 mm. longo, bracteis crescenticis; baccae rotundatae brunneo-velutinae.—Honduras: La Ceiba, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8015 (type in herb. Univ. Illinois).

Piper gracillimum Trelease. Shrub up to 2.5 meters tall; leaves comparatively small, 3-nerved, with a long, slender apex. In rich soil, shady ravines, semi-arid region near Coyoles.

Piper gracillimum Trelease, var. **dantoense** Trelease, var. nov.—Arbuscula glabra trimetralis, ramis gracilibus; folia lanceolata apice subcaudata, basi acuta, 9 cm. longa 4 cm. lata trinervia, petiolo fere nullo; spicae ca. 60 mm. longae atque 3 mm. crassae, pedunculo 10 mm. longo; baccae oblongae.—Honduras: Río Danto, Mt. Cangrejal, Dept. Atlántida, alt. 180 meters, *Yuncker, Koepper & Wagner* 8485 (type in herb. Univ. Illinois).

Piper Koepperi Trelease, sp. nov.—Subarborescens ca. trimetralis glabra vel folia majora subtus in basibus laminarum pubescentia; folia lanceolato-ovata acuta basi gibboso-subcordata 8.5–25 cm. longa 4–9 cm. lata 5-nervia, venulis transversis conspicuis, in sicco lucida papyracea, petiolo 1–2 cm. longo; spicae in statu fructifero 60 mm. longae 5 mm. crassae, pedunculo 10 mm. longo; bracteae crescenticae; baccae ellipsoideae cum rhachi elongatae, stigmatibus parvis sessilibus.—Honduras: Near Medina, Aguán Valley, Dept. Yoro, alt. 195 meters, *Yuncker, Koepper & Wagner* 8631 (type in herb. Univ. Illinois). Also near La Ceiba, Dept. Atlántida, No. 8014.

Piper meritum Trelease, sp. nov.—Subarborescens ca. 3 m. alta, internodiis brevibus modice crassis transiente molliter pubescentibus; folia subovato-elliptica acute acuminata, basi insigniter inaequaliter cordulata, 15–16 cm. longa 8 cm. lata, e medio inferiore pinnatinervia, nervis 5×6 pallidis substrigosis, petiolo vix 10 mm. longo lobo basali longiore folii occulto; spicae plus minusve curvatae 100 mm. longae 3 mm. crassae apiculatae, pedunculo 10 mm. longo;

baccae parvae subcubicae.—Honduras: La Ceiba, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8363 (type in herb. Univ. Illinois).

Piper multinervium Mart. & Gal. Shrub or small tree, up to 3.5 meters in height; leaves rough. Common in thickets about the plains and on the lower mountain slopes, vicinity of La Ceiba.

Piper puente-altoanum Trelease, sp. nov.—Arbuscula 5-metralis, internodiis brevibus graciliusculis aliquanto ut petiolus pedunculusque scabridis; folia oblongo-subelliptica acuminata, basi inaequaliter obtusa, 18–20 cm. longa 6 cm. lata e medio inferiore pinnatinervia, nervis ca. 6×2, supra granuloso-scabrida, subtus saltem in statu juvenili ad nervos strigosa, petiolo vix 2+3 mm. longo; spicae vix 50 mm. longae atque 2 mm. crassae, pedunculo vix 5 mm. longo.—Honduras: Puente Alto, on the railroad about 50 km. east of La Ceiba, Dept. Atlántida, alt. 240 meters, *Yuncker, Koepper & Wagner* 8549 (type in herb. Univ. Illinois).

Piper sagax Trelease, sp. nov.—Frutex 2-metralis petiolis atque nervis subtus evanescente puberulus; folia late elliptica aliquanto acuminata, basi rotundata latere altero breviore, ca. 15–18 cm. longa atque 9 cm. lata, e 2 tertiis inferioribus pinnatinervia, nervis 4×5, supra lucida intense viridia, petiolo gracili 10+2 mm. longo exalato; spicae 40 mm. longae 3 mm. crassae, pedunculo 10 mm. longo.—Honduras: Coyoles, Dept. Yoro, *Yuncker, Koepper & Wagner* 8030 (type in herb. Univ. Illinois).

Piper subaequilaterum Trelease, sp. nov.—Arborescens vix trimetralis tomentulosa, internodiis primo modice brevibus crassisque glabrescentibus; folia subrhombico-elliptica acuta, basi fere aequilateraliter obtusa, 14 cm. longa 8 cm. lata e medio inferiore pinnatinervia, nervis 5×2, supra intensius viridia, petiolo 10–15 mm. longo; spicae 60 mm. longae 3 mm. crassae, pedunculo 5 mm. longo.—Honduras: Roma siding, about 25 km. east of La Ceiba, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8565 (type in herb. Univ. Illinois).

Piper tuberculatum Jacq. Shrub, sometimes somewhat scandent; petioles with a characteristic horn-like projection at the base of the leaf blade. In ravine of a dry stream near Coyoles.

Piper tuberculatum var. **cangrejalense** Trelease, var. nov.—Subscandens glabra, costis foliorum pubescentibus, petiolis brevibus plus minusve verrucosis; lamina folii 12–13 cm. longa 6–7 cm. lata.—Honduras: Lower slopes of Mt. Cangrejal, Dept. Atlántida, *Yuncker, Koepper & Wagner* 8204 (type in herb. Univ. Illinois).

Piper tumidipedunculum Trelease, sp. nov.—Arborescens ca. trimetralis, ramis nodosis, internodiis brevibus, petiolis atque ramis infra insertionem petioli aliquanto crispo-pilosis exceptis glabra; folia lanceolata vel oblanceolata subcaudata, basi aliquanto inaequaliter cordulata, 12–19 cm. longa 4–6 cm. lata, e 2 tertiis inferioribus pinnatinervia, nervis ca. 4×2, lucida, chartacea, petiolo 5–10 mm. longo; spicae 75 mm. longae 3 mm. crassae, pedunculo carnoso tumido 10 mm. longo; bracteae subcrescenticae; baccae subcrateriformi-depressae.—Honduras: Las Flores, near Coyoles, Dept. Yoro, alt. 300 meters, *Yuncker, Koepper & Wagner* 8151 (type in herb. Univ. Illinois).

Piper uncatum Trelease. Shrub or small tree about 2 meters tall. In thickets on the lower slopes of Mt. Cangrejal.

Piper variabile C. DC. var. **obtentum** Trelease, var. nov.—Arbuscula trimetralis cito glabrescens, internodiis floriferis brevibus graciliusculis; folia late subovata subacuta, basi fere aequaliter truncato-rotundata, 18 cm. longa 12 cm. lata, e 2 tertiis inferioribus multiplinervia, nervis ca. 5×2, subtus prope basin transiente araneosa, petiolo 3–5 cm. longo exalato; spicae 70 mm. longae 3 mm. crassae, pedunculo 15 mm. longo; baccae minutae.—Honduras: Mt. Cangrejal, Dept. Atlántida, alt. 150 meters, *Yuncker, Koepper & Wagner* 8495 (type in herb. Univ. Illinois).

POTHOMORPHE Miquel

Pothomorphe peltata (L.) Miq. var. **hypoleuca** Trelease. Herbaceous, about 1 meter tall; spikes white, numerous. In ballast along the railroad right-of-way near La Ceiba.

SALICACEAE

SALIX L.

Salix chilensis Molina. Tree up to 15 or 18 meters tall and nearly one meter in diameter. Common in wet areas and along banks of streams on the plains about La Ceiba.

FAGACEAE

QUERCUS L.

Quercus aguana Trelease, sp. nov.—*Leucobalanos-Macrophyllae.* Ramuli crassiusculi 4 mm. crassi aliquanto striati, primo dense ferrugineo-tomentosi, serius glabrescentes atque lucidi, pallido-

lenticellati; folia ad apicem rami aggregata decidua elliptico-subobovata obtusa vel emarginato-rotundata, basi breviter cordata, undulato-crenata, paullo impresso-reticulata, supra costa ferrugineo-tomentosa excepta viridia atque glabrescentia, subtus dense pallido-tomentulosa, 16–18 cm. longa 8–9 cm. lata, venis ca. 15×2 parum furcatis vix arcuatis, petiolo vix 10 mm. longo; fructus annuus ut videtur apice pedunculi tomentosi 2 cm. longi singulus; cupulae immaturae squamae adpressae cinereo-pubescentes.—Honduras: Las Flores, near Coyoles, Dept. Yoro, alt. 270 meters, *Yuncker, Koepper & Wagner* 8180 (type in herb. Univ. Illinois). A tree 10–12 meters tall and 50 cm. in diameter.

Quercus oleoides Cham. & Schlecht. Tree about 15 meters tall and 60 cm. in diameter, the bark rough. In open forest area at about 270 meters altitude near the village of Las Flores.

Quercus yoroensis Trelease, sp. nov.—*Erythrobalanos-Linguaefoliae.* Ramuli crassiusculi 3 mm. crassi aliquanto striati annotini ferrugineo-tomentosi, serius grisei vix lenticellati; gemmae rotundatae vel ellipsoideae glabratae lucido-brunneae 5 mm. longae 2 mm. latae; folia elliptica obtusa, basi rotundata, 9–15 cm. longa 4–6 cm. lata plus minusve revoluta, chartacea, sublucida, costa utrinque ferrugineo-tomentulosa, nervis ca. 12×2 supra impressis subtus salientibus furcatis arcuatis, petiolo 5 mm. longo tomentuloso; fructus ut videtur biennis pedunculum 5 cm. longum terminans primo depresso-globosus, squamis adpressis lucidis glabratis obtusis.—Honduras: Las Flores, Aguán Valley, Dept. Yoro, alt. 330 meters, *Yuncker, Koepper & Wagner* 8181 (type in herb. Univ. Illinois). A tree 10 meters tall and 40 cm. in diameter.

Quercus yoroensis var. **aguanana** Trelease, var. nov.—E *Q. yoroensi* ramulis gracilioribus griseo-tomentulosis differt; folia magis lanceolato-oblonga usque plus minusve rhombico-subovata fere glabra utrinque lucida olivacea; fructus singuli vel geminati pedunculum brevem terminantes, squamis cupulae opacioribus atque densius pubescentibus.—Honduras: Growing with the species, at 300 meters altitude, *Yuncker, Koepper & Wagner* 8185 (type in herb. Univ. Illinois).

ULMACEAE

CELTIS L.

Celtis iguanaea (Jacq.) Sarg. Small tree about 5 meters tall. In semi-arid forest region near Coyoles.

TREMA Lour.

Trema micrantha (L.) Blume. Tree about 7.5 meters tall; flowers small, greenish white; fruit red. In forest on the lower slopes of Mt. Cangrejal.

MORACEAE

ARTOCARPUS Forst.

Artocarpus communis Forst. Cultivated. Occasionally found at some distance from dwellings as an escape.

CASTILLA Cerv.

Castilla elastica Cerv. Tree up to 12 meters tall and 30 to 45 cm. in diameter; bark smooth; latex white and very abundant. Common on the plains about La Ceiba.

CECROPIA L.

Cecropia asperrima Pittier. Tree about 8 to 10 meters tall. Common in cut-over areas and edge of forest on the plains and lower foothills about La Ceiba.

DORSTENIA L.

Dorstenia choconiana Wats. var. **integrifolia** D. Sm. In deep forest on the foothills back of La Ceiba.

Dorstenia Contrajerva L. var. **Houstoni** (L.) Bureau. In rich soil, wet ravine on slope near Puente Alto, about 50 kilometers east of La Ceiba, at about 240 meters altitude.

FICUS L.

Ficus glabrata HBK. Fine, spreading tree about 15 meters tall, the trunk about 1.5 meters in diameter. On the banks of a stream, lower slopes of Mt. Cangrejal, at 150 meters altitude.

Ficus Hemsleyana Standl. Tree about 12 meters tall. In forest on the lower slopes of Mt. Cangrejal.

Ficus involuta (Liebm.) Miq. Tree about 15 meters tall and 75 cm. in diameter. In forest, foothills back of La Ceiba.

URTICACEAE

MYRIOCARPA Benth.

Myriocarpa obovata D. Sm. Tree about 5 meters tall; spikes slender, 25 to 30 cm. long. On the bank of the Danto River, lower slopes of Mt. Cangrejal back of La Ceiba.

PILEA Lindl.

Pilea pubescens Liebm. Small herb 5 to 7 cm. tall. On mossy rocks, stream bank on the slopes of Mt. Cangrejal.

POUZOLZIA Gaud.

Pouzolzia obliqua Gaud. Shrub, about 1 meter tall. In ravines in semi-arid upland near the village of Medina, at 180 meters altitude.

URERA Gaud.

Urera alceaefolia Gaud. Small tree about 4.5 meters tall; flowers small, green. In forest on the slopes of Mt. Cangrejal, at 360 meters altitude.

Urera elata (Swartz) Griseb. Small tree about 6 meters tall, with stinging hairs; flowers greenish white. In wet forest on slopes of Mt. Cangrejal, at 150 meters altitude.

LORANTHACEAE

ORYCTANTHUS Eichl.

Oryctanthus cordifolius (Presl) Eichl. Parasitic. Leaves opposite, ovate, sessile; spikes and berries red. Frequent on trees on the plains and in the forest on the lower slopes about La Ceiba.

PHORADENDRON Nutt.

Phoradendron piperoides (HBK.) Trelease. Leaves elliptic and acute. Parasitic on a large fig tree on the bank of the Cangrejal River in the foothills back of La Ceiba.

Phoradendron robustissimum Eichl. Parasitic. Leaves oblong, obtuse; spikes greenish yellow. Frequent on trees in semi-arid woodland near Coyoles.

Phoradendron venezuelense Trelease. Parasitic. Leaves 3–4 cm. long, oblong-spatulate; spikes green. On trees in semi-arid woodland near Coyoles.

PHTHIRUSA Mart.

Phthirusa pyrifolia (HBK.) Eichl. Parasitic. Stems slender; leaves oblong or ovate-oblong, mucronate. Frequent on trees in forest on the lower slopes of Mt. Cangrejal.

PSITTACANTHUS Mart.

Psittacanthus calyculatus (DC.) Don. Parasitic. Stems stout and angled; leaves mostly falcate; flowers and berries red. On tree near the Cangrejal River, foothills back of La Ceiba.

STRUTHANTHUS Mart.

Struthanthus Deppeanus (S. & C.) Blume. Parasitic. Stems twining; leaves petiolate, elliptic, with acute base and attenuate-acuminate apex. On trees in the forest, foothills back of La Ceiba.

Struthanthus orbicularis (HBK.) Blume. Parasitic. Stems somewhat twining; leaves obtuse; fruit dark red. On trees near the bank of the Cangrejal River, foothills back of La Ceiba.

Struthanthus phaneroneurus Standl., sp. nov.—Frutex parasiticus omnino glaber, ramis vetustioribus teretibus griseis rimosis 4 mm. crassis, junioribus ochraceis vel brunnescentibus, internodiis brevibus; folia in sicco coriacea sed tenuia breviter petiolata, petiolo 3–5 mm. longo late canaliculato; lamina rotundato-obovata vel late elliptico-obovata 2.5–3.5 cm. longa 1.5–2.8 cm. lata, apice subtruncata vel late rotundata, interdum apiculata vel emarginata, basi cuneata, vulgo subito contracta atque breviter acute decurrens, supra in sicco olivacea lucida, nervis venulisque prominulis, subtus concolor lucidaque, costa gracillima elevata, nervis lateralibus utroque latere 5–6 obliquis angulo semirecto vel angustiore adscendentibus prominulis inaequalibus, venulis inconspicuis vel obsoletis, margine pallido tenui; inflorescentiae spicatae simplices in axillis singulae vix ultra 5 mm. longae brevissime pedunculatae, floribus in spiculas trifloras parvas sessiles dispositis, bracteis obovatis vel spathulatis, apice obtusis vel rotundatis et apiculatis floribus brevioribus.—Honduras: Parasitic on a tree in semi-arid woodland near Coyoles, Dept. Yoro, July 26, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8662 (type in Herb. Field Mus.).

ARISTOLOCHIACEAE

ARISTOLOCHIA L.

Aristolochia grandiflora Swartz. Vine. Flowers very large and handsome, yellowish brown with purple mottling within, with vile, carrion-like odor. Climbing in thicket, foothills back of La Ceiba.

Aristolochia maxima L. Vine. Stems woody and with wide, corky wings; leaves oblong-obovate; flowers very dark red; fruit large, opening to form a basket-like structure. Climbing over shrubs in a thicket on the lower slopes of Mt. Cangrejal.

Aristolochia odoratissima L. Woody vine. Leaves ovate-cordate, acute; flowers large, cream with maroon mottling. Climbing in thicket, foothills back of La Ceiba.

Aristolochia pilosa HBK. Herbaceous vine. Stems, petioles, and pedicels covered with erect, brown hairs; leaves ovate-cordate, obtuse; outside of calyx limb dark red lined with green, inside deep violet spotted with yellow. Climbing in thicket, foothills back of La Ceiba.

POLYGONACEAE

COCCOLOBA L.

Coccoloba acuminata HBK. Shrub or small tree up to 2.5 meters tall and 3 to 5 cm. in diameter; spikes and fruit red. In ravines, semi-arid woodland region near Coyoles.

Coccoloba barbadensis Jacq. Small tree about 4.5 to 6 meters tall; leaves up to 25 cm. long; flowers green. On banks of ravine in semi-arid woodland region near Coyoles; also in open forest, foothills back of La Ceiba.

Coccoloba Browniana Standl. Tree about 7 meters tall; leaves rounded-ovate-cordate; fruit green, wrinkled. In semi-arid woodland region near Coyoles.

Coccoloba Tuerckheimii D. Sm. Tree about 7 meters tall; bark flaking; leaves obovate, very large; inflorescence with numerous long, bright red branches; flowers greenish white. In forest, foothills back of La Ceiba.

Coccoloba Uvifera (L.) Jacq. Tree about 7 meters tall and 20 cm. in diameter; leaves subsessile, nearly round. In sandy soil near the beach, vicinity of La Ceiba.

POLYGONUM L.

Polygonum lapathifolium L. Herb, about 1 meter tall; flowers pale pink. On sandbar in the Cangrejal River, foothills back of La Ceiba.

Polygonum persicarioides HBK. Herb, about 60 cm. tall; flowers pale pink. On sandbars in the Aguán River, near Coyoles.

AMARANTHACEAE

AMARANTHUS L.

Amaranthus spinosus L. Weedy herb, mostly less than 1 meter tall, with numerous sharp, rigid spines. Common in waste places about La Ceiba.

GOMPHRENA L.

Gomphrena dispersa Standl. Plants low and sprawling; flower heads white to pink. A weedy, herbaceous plant, very common in waste places about La Ceiba; also at Coyoles.

IRESINE P. Br.

Iresine Celosia L. Herb. Scrambling over low shrubs in thicket on the bank of the Danto River, foothills back of La Ceiba.

Iresine nigra Uline & Bray. Small tree about 3.5 meters tall; spikelets short, white. In semi-arid woodland region near Coyoles.

NYCTAGINACEAE

BOERHAAVIA L.

Boerhaavia erecta L. Herb; flowers small, white. Weed, common in waste places in the semi-arid region about Coyoles; also in the vicinity of La Ceiba.

MIRABILIS L.

Mirabilis Jalapa L. Flowers purple-red. A single large colony found in the foothills back of La Ceiba.

NEEA Ruiz & Pavón

Neea psychotrioides D. Sm. Shrub or small tree about 4.5 meters tall; flowers greenish yellow. Frequent in forest on the foothills and lower slopes of Mt. Cangrejal.

PHYTOLACCACEAE

MICROTEA Swartz

Microtea debilis Swartz. A low, spreading, weedy herb; flowers very small, greenish white. In sandy soil near the Cangrejal River, foothills back of La Ceiba.

PETIVERIA L.

Petiveria alliacea L. Plant about 1 meter tall or less; stems woody at the base; spikes slender, up to 25 cm. long; flowers white.

In sandy soil on the bank of the Cangrejal River, foothills back of La Ceiba.

PHYTOLACCA L.

Phytolacca rivinoides Kunth & Bouché. Herb, about 2 meters tall; peduncles and pedicels red; flowers white; fruit dark purple. In an open, burned-over area near the Danto River on the slopes of Mt. Cangrejal, at 240 meters altitude.

RIVINA L.

Rivina humilis L. Low, weedy shrub; flowers white; fruit red. Frequent about La Ceiba.

AIZOACEAE

MOLLUGO L.

Mollugo verticillata L. A low, spreading, weedy herb; sepals white. In waste places about La Ceiba.

PORTULACACEAE

PORTULACA L.

Portulaca oleracea L. Low, succulent herb; corolla yellow. On sandbars in the Aguán River, near Coyoles.

Portulaca pilosa L. Low, succulent herb; corolla red. On gravel bars in the Aguán River, near Coyoles.

TALINUM Adans.

Talinum triangulare (Jacq.) Willd. Herb. Leaves succulent; flowers pale pink. In sandy soil, thicket along the Aguán River, near Coyoles.

NYMPHAEACEAE

NYMPHAEA L.

Nymphaea ampla (Salisb.) DC. Flowers white. In ponds near La Ceiba.

MENISPERMACEAE

CISSAMPELOS L.

Cissampelos tropaeolifolia DC. Vine. Leaves broadly ovate, peltate; flowers greenish; fruit red. Frequent in thickets, foothills back of La Ceiba.

DISCIPHANIA Eichl.

Disciphania calocarpa Standl. Woody vine; leaves ovate, acute, peltate; fruit very fleshy, orange-red. Climbing in thicket, foothills back of La Ceiba.

HYPERBAENA Miers

Hyperbaena hondurensis Standl. Woody vine; flowers yellowish orange, with carrion-like odor. Climbing in trees, thickets on banks of the Danto River, slopes of Mt. Cangrejal, at 150 meters altitude.

MAGNOLIACEAE

TALAUMA Juss.

Talauma mexicana (DC.) Don. A tree about 15 meters high, in forest on slopes of Mt. Cangrejal, at 180 meters, No. 8845. The material available for study consists of a young branch with two large leaves and a detached young fruit. At first I was inclined to believe, partly because of its geographic origin, that a new species was represented, and such, in fact, may well be the case. However, the material of the genus available for comparison is so scant and incomplete that it does not seem desirable at present to describe the Honduran tree as new. It is noteworthy for the unusually large leaves, as much as 42 cm. long and 16 cm. wide, and for the very large young fruit, with exceedingly numerous carpels. Further material from Honduras and Mexico is needed before it can be decided definitely whether the Honduran form is actually *T. mexicana* or an undescribed species.—PAUL C. STANDLEY.

ANNONACEAE

ANNONA L.

Annona reticulata L. Tree up to 15 meters tall and 50 cm. in diameter; flower parts fleshy. In open forest near the village of Las Flores, at 300 meters altitude; also in forest on foothills back of La Ceiba.

MYRISTICACEAE

COMPSONEURA Warb.

Compsoneura Sprucei (A. DC.) Warb. Tree about 6 meters tall; flowers small, numerous, cream-colored; fruit with a thin, fleshy coat and a single seed about 2 cm. long, covered with an aril.

On the bank of the Salado River, about 20 kilometers west of La Ceiba.

MONIMIACEAE

SIPARUNA Aubl.

Siparuna nicaraguensis Hemsl. Tree about 6 meters tall; fruit fleshy, pink, aromatic. Margin of the Danto River, slopes of Mt. Cangrejal, at 300 meters altitude.

LAURACEAE

MISANTECA C. & S.

Misanteca capitata C. & S. Tree about 7 meters tall; fruit green, partially enclosed in a red cup. In deep forest on the slopes of Mt. Cangrejal, at 330 meters altitude.

NECTANDRA Roland

Nectandra sanguinea Rottb. Tree about 10 meters tall and 35 cm. in diameter; flowers white. In open forest, semi-arid upland region near the village of Las Flores, at 300 meters altitude; also in forest, foothills near the Cangrejal River back of La Ceiba.

OCOTEA Aubl.

Ocotea cernua (Nees) Mez. Tree about 7 meters tall. In open forest on the foothills near the Cangrejal River, back of La Ceiba.

PHOEBE Nees

Phoebe helicterifolia Mez. Tree about 9 meters tall; flowers creamy white. On the banks of the Danto River, lower slopes of Mt. Cangrejal, back of La Ceiba.

Phoebe mexicana Meissn. Tree about 7 meters tall; leaves shiny above; pedicels red. In a ravine near the village of Medina, at 180 meters altitude.

CRUCIFERAE

CAKILE Mill.

Cakile lanceolata (Willd.) O. E. Schulz. Low herb; flowers white; fruit 1-seeded. In sand near the seashore, vicinity of La Ceiba.

CAPPARIDACEAE

CAPPARIS L.

Capparis admirabilis Standl., sp. nov.—Arbuscula 3.5 m. alta, trunco 7 cm. diam., ramis rectis rigidis teretibus vel subcompressis dense adpresso-lepidotis, internodiis brevibus; folia brevissime petiolata coriacea adscendentia vel suberecta, petiolo crasso vix ultra 3 mm. longo; lamina linearis 13–23 cm. longa prope basin 10–12 mm. lata e basi rotundata usque apicem angustum sensim attenuata, supra primo dense adpresso-stellato-pilosula, cito glabrata, nervis venisque prominulis, subtus ubique dense adpresse albido-lepidota, costa crassa elevata, nervis numerosis valde obliquis angulo acuto adscendentibus, venulis prominentibus arctissime reticulatis; inflorescentiae axillares cymoso-corymbosae longipedunculatae folia aequantes, pedunculis ramisque compressis dense lepidotis, pedicellis 5–7 mm. longis; sepala in alabastro aperta deltoideo-ovata acutiuscula ca. 1 mm. longa vel paullo ultra; petala inaequalia ochroleuca spathulato-obovata usque 1 cm. longa apice rotundata intus glabra extus dense stellato-tomentosa; stamina 8 petalis duplo longiora, filamentis basi stellato-pilosis; gynophorum ca. 1 cm. longum glabrum, ovario oblongo dense lepidoto.—Honduras: In woodland in semi-arid region near Coyoles, Dept. Yoro, June 29, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8130 (type in Herb. Field Mus.).

A well marked species, altogether unlike any other known from Central America. Most remarkable are the long and narrow, rigid leaves, which recall those of certain species of northern South America. Noteworthy, also, is the small number of stamens, but the plant seems better referable to *Capparis* than to other genera of the family, to which the stamen number might seem to necessitate its reference.

Capparis indica (L.) Fawc. & Rendle. Tree about 4.5 meters tall. In semi-arid woodland region near the village of Las Flores.

Capparis Yunckeri Standl., sp. nov.—Frutex scandens, ramis viridibus vel viridescentibus subteretibus, novellis densissime pilis stellatis sessilibus atque stipitatis intermixtis tomentosis, internodiis brevibus; folia parva breviter petiolata in sicco coriacea, petiolo crasso 5–7 mm. longo stellato-tomentoso; lamina elliptico-ovalis vel subrotundata 2.5–4.5 cm. longa 2–3.5 cm. lata apice rotundata, basi late rotundata vel truncata, supra in statu juvenili dense stellato-tomentosa, cito glabrata, nervis profunde impressis, subtus pallida

ubique dense stellato-tomentosa, nervis costaque prominentibus sed tomento occultis, nervis lateralibus utroque latere 4–5; flores non visi; fructus (imperfectus solum visus) 2.5 cm. longe pedunculatus, gynophoro 5 mm. longo; bacca ut videtur ellipsoidea ca. 5 cm. longa glabrata sed pilis minutis stellatis hince inde conspersa.—Honduras: Climbing in a thicket in woodland, semi-arid region near Coyoles, Dept. Yoro, July 25, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8615 (type in Herb. Field Mus.).

This also is an outstanding plant in the genus *Capparis*, and I have found no species to which it is at all similar. It is noteworthy for its scandent habit and for the small, broad, copiously stellate-tomentose leaves.

CLEOME L.

Cleome aculeata L. Herb about 60 cm. tall, with a pair of short, slightly recurved prickles at the lower nodes; seeds reddish. In waste area near La Ceiba.

Cleome serrata Jacq. Weedy herb with stem somewhat woody at the base; flowers creamy white. In waste places on the plains and in the foothills about La Ceiba.

PODOSTEMONACEAE

TRISTICHA Thou.

Tristicha hypnoides Spreng. Aquatic herb, superficially resembling certain aquatic bryophytes. Stems slender, branching; leaves minute, in three rows. Covering submerged rocks in current of swift mountain stream on the slopes of Mt. Cangrejal, at 270 meters altitude.

HAMAMELIDACEAE

LIQUIDAMBAR L.

Liquidambar Styraciflua L. Tree about 7 meters tall and 20 cm. in diameter. This species, common in the southeastern United States, has been previously reported from the highlands about Siguatepeque. Occasional in deep forest on the slopes of Mt. Cangrejal, at 300 meters altitude.

ROSACEAE

HIRTELLA L.

Hirtella triandra Swartz. Small tree about 4.5 meters tall. On the rocky bank of the Danto River, lower slopes of Mt. Cangrejal.

LEGUMINOSAE

ABRUS L.

Abrus precatorius L. Woody vine. Seeds bright red with a black spot, handsome and often used as ornaments. Occasional in thickets on the lower slopes of Mt. Cangrejal.

ACACIA Willd.

Acacia riparia HBK. Low, spreading tree about 7 meters tall and 30 cm. in diameter, armed with a pair of short, recurved prickles at the nodes; leaves bipinnate, with numerous very small leaflets; flowers white. Common in woodland and open pastures in semi-arid region in the Aguán River Valley above Olanchito and about Coyoles.

Acacia spadicigera Schl. & Cham. Small tree or shrub about 2 meters tall, armed with pairs of large, nodal, bullhorn-like spines inhabited by colonies of a small but exceedingly vicious species of ant. Occasional in semi-arid woodland near Coyoles.

Acacia telensis Standl. Woody vine, the older branches 4-angled, armed with numerous small, more or less recurved prickles; pods large, thin. In thickets near the Danto River, slopes of Mt. Cangrejal, at 180 meters altitude; also in thickets on the plain back of Roma, about 25 kilometers east of La Ceiba.

BAUHINIA L.

Bauhinia divaricata L. Shrub or small tree about 4.5 meters tall; flowers white to pale pink. In forest on the slopes of Mt. Cangrejal, at 150 meters altitude.

Bauhinia hondurensis Standl. A coarse, woody vine; corolla white. Climbing in thickets on the foothills back of La Ceiba; also in a ravine near the village of Medina, at 200 meters altitude.

Bauhinia sp. A large, woody species with strongly flattened stems which curve in a regular zigzag manner was frequently observed climbing in trees in forests on the lower slopes back of La Ceiba. No plants, however, were found in flower or fruit.

BENTHAMANTHA Alef.

Benthamantha mollis (HBK.) Alef. A low shrub less than 1 meter tall; flowers yellowish. In semi-arid woodland region near Coyoles.

CALLIANDRA Benth.

Calliandra arborea Standl. Shrub or small tree up to 6 meters tall. Stamens long and bright red, making a showy flower cluster. Originally described from specimens collected near Siguatepeque. In thickets, foothills back of La Ceiba; also in open forest on rocky mountain slope above Roma, about 25 kilometers east of La Ceiba, at 360 meters altitude.

Calliandra confusa Sprague & Riley. Shrub about 2.5 meters tall; leaflets very small and numerous; stamens long, bright red. Forming thickets in the rocky bed of the Danto River, slopes of Mt. Cangrejal, at 240 meters altitude.

CALOPOGONIUM Desv.

Calopogonium coeruleum Benth. A large vine, woody below; flowers large, purple or lavender, produced in abundance in long, handsome racemes. Common in thickets on the lower slopes of Mt. Cangrejal back of La Ceiba.

CASSIA L.

Cassia bacillaris L. Shrub or small tree up to 7 meters tall; flowers large, creamy yellow, showy. In thickets, foothills back of La Ceiba.

Cassia occidentalis L. Herb up to 1 meter tall; flowers yellow. Abundant in sandy soil, thickets along the Aguán River near Coyoles.

Cassia riparia HBK. Herb up to 1 meter tall; flowers yellow. Common along trails in the foothills back of La Ceiba.

CROTALARIA L.

Crotalaria retusa L. Herb about 75 cm. tall. Flowers rather pretty, the petals yellow within, reddish brown outside. Abundant on gravelly bars in the Aguán River near Coyoles.

Crotalaria striata Schrank. Herb about 90 cm. tall; corolla yellow, streaked with red. In sand near the seashore, vicinity of La Ceiba.

Crotalaria vitellina Ker. Herb about 60 cm. tall; flowers yellow. On gravelly bar in the Aguán River, near Coyoles.

CYNOMETRA L.

Cynometra retusa Britt. & Rose. A handsome tree about 30 meters tall and 1 meter in diameter, the base strongly buttressed.

Leaflets 2; pods subglobose, brown-scurfy. On river bank, foothills back of La Ceiba.

DESMODIUM Desv.

Desmodium axillare (Swartz) DC. Herb. Stems creeping; flowers on erect branches, dark red. Common along trails in the foothills back of La Ceiba.

DIALIUM L.

Dialium guianense (Aubl.) Steud. Tree about 15 meters tall; pods globose-ovoid, smooth, 2 cm. long. Wood said to be very hard and useful for construction purposes requiring resistant timber. In forests on the lower slopes of Mt. Cangrejal.

ENTADA Adans.

Entada polystachia (L.) DC. Woody vine with thick, trunk-like stem; flowers with strong carrion-like odor; stamens white; corolla reddish. In open forest on the foothills back of La Ceiba.

ENTEROLOBIUM Mart.

Enterolobium cyclocarpum (Jacq.) Griseb. A very large tree. This and the ceiba are the two largest trees of the region. Occasional in forest and pastures of the Aguán River Valley. Originally abundant.

ERYTHRINA L.

Erythrina hondurensis Standl. A small tree about 7.5 meters tall, armed with short, stout prickles. Leaflets 3, large; pods abundant, long; seeds scarlet. Banks of the Danto River, slopes of Mt. Cangrejal, 180 meters altitude; also in the semi-arid woodland region near Coyoles.

GLIRICIDIA HBK.

Gliricidia sepium (Jacq.) Steud. Tree about 6 meters tall and 15 cm. in diameter; flowers pink. Abundant on the plains about La Ceiba, where it is extensively used for living fence posts.

INGA Scop.

Inga edulis Mart. Broad-topped tree about 7 meters tall and 20 cm. in diameter. Pods brown-pubescent, twisted. On banks of the Salado River, about 20 kilometers west of La Ceiba; also in an upland ravine near the village of Medina, at 150 meters altitude.

Inga Pittieri Micheli. Tree about 7 meters tall. Pods large, green, smooth, strongly 4-angled. On the plain back of Roma, about 25 kilometers east of La Ceiba.

Inga Roussoviana Pittier. Tree about 7 meters tall; corolla greenish white; stamens white. On the low banks of the Salado River about 20 kilometers west of La Ceiba; also in open forest on the plains back of Roma, about 25 kilometers east of La Ceiba.

Inga Yunckeri Standl., sp. nov.—Arbor 9-metralis, ramulis glabratis fusco-ferrugineis lenticellis numerosis pallidis parvis conspersis; folia mediocria 2 cm. longe petiolata, rhachi ca. 2.5 cm. longa exalata fere omnino glabra; foliola bijuga oblongo-elliptica subaequalia 13–18.5 cm. longa 7–8.5 cm. lata acuta vel breviter acuminata, basi acuta, crasse membranacea, supra in sicco viridia lucida glabra, costa nervisque prominentibus, subtus concoloria sublucida saltem in statu adulto omnino glabra, costa gracili elevata, nervis lateralibus utroque latere ca. 10; flores spicati, spicis brevibus dense multifloris pedunculatis, pedunculis lutescenti-hispidulis usque 18 mm. longis, rhachi ca. 1 cm. longa, bracteis minutis inconspicuis, spicis in paniculas parvas densas ca. 7 cm. longas atque aequilatas aggregatis; calyx tubulosus 6 mm. longus glaber striatus, sursum paullo dilatatus, dentibus brevibus apice rotundatis; corolla viridis 10–12 mm. longa dense fulvido-sericea, lobis lanceolato-oblongis attenuato-acuminatis 2 mm. longis; stamina alba usque 2.5 cm. longa. —Honduras: In foothills back of La Ceiba, near Cangrejal River, August 4, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8805 (type in Herb. Field Mus.).

INDIGOFERA L.

Indigofera lespedezioides HBK. Plants up to 1 meter tall, slender, suffruticose. Flowers salmon-colored. In rocky soil on the mountain slope above the village of Las Flores, at 300 meters altitude.

LONCHOCARPUS HBK.

Lonchocarpus Michelianus Pittier. Handsome tree about 18 meters tall. Flowers about 1.5 cm. long, pinkish to lavender, abundant, showy. Solitary in open grassland near the Cangrejal River, foothills back of La Ceiba.

Lonchocarpus yoroensis Standl., sp. nov.—Arbor 6-metralis, ramulis fusco-brunnescentibus crassis teretibus lenticellis parvis pallidis conspersis, novellis sat dense minuteque adpresso-pilosulis,

internodiis abbreviatis; stipulae inconspicuae late ovato-deltoideae obtusae ca. 1.5 mm. longae; folia inter minora petiolata, rhachi petiolo adjecto 3–4 cm. longa gracili dense puberula; foliola 5 ca. 2 mm. longe petiolulata elliptica vel obovata paullo inaequalia 2.5–6 cm. longa 2–3 cm. lata apice obtusa vel anguste rotundata, basi obtusa vel subacuta, supra dense breviter pilosula, subtus dense pilis pallidis subpatentibus molliter pilosa, nervis lateralibus utroque latere ca. 5; inflorescentia (cum alabastris tantum visa) spiciformis folia aequans, longipedunculata laxe pauciflora, rhachi dense adpresso-pilosula, floribus sessilibus vel breviter pedicellatis, bracteis bracteolisque late ovatis obtusis adpresso-pilosulis; legumen (perfectum non visum) compressum 1.5 cm. latum, suturis tenuibus, seminibus ut videtur 1 vel pluribus.—Honduras: In semi-arid upland near Medina, Dept. Yoro, alt. 180 meters, July 26, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8658 (type in Herb. Field Mus.).

MACHAERIUM Pers.

Machaerium Pittieri Macbr. Small tree about 5 meters tall. Flowers small, purplish. In forest on the lower slopes of Mt. Cangrejal.

MIMOSA L.

Mimosa pigra L. Shrub or small tree 2.5 to 3.5 meters tall, armed with short, stout prickles. Leaflets numerous, small; flowers pink; pods brown-hairy. On gravelly bar in the Aguán River, near Coyoles; also in sandy soil near the seashore, vicinity of La Ceiba. Common.

Mimosa pudica L. Low, prostrate, suffrutescent. Flowers pink. A common, weedy plant about La Ceiba; also frequent in waste places in the Aguán River Valley.

PHASEOLUS L.

Phaseolus adenanthus Mey. Herbaceous vine. Flowers purplish yellow. Climbing in thickets on the banks of the Danto River, slopes of Mt. Cangrejal, at 150 meters altitude.

PITHECOLOBIUM Mart.

Pithecolobium dulce (Roxb.) Benth. Small tree with gray bark, about 6 meters tall, armed with sharp, stout spines; leaflets 2, oblique, about 2 cm. long. A common and characteristic tree in the semi-arid woodland region near Coyoles.

Pithecolobium guatemalense (Britt. & Rose) Standl. Tree about 6 meters tall and 15 to 20 cm. in diameter. Leaflets numerous, oblique, about 1.5 cm. long, softly pubescent. Only sterile material was obtainable and the identification is uncertain. A characteristic tree in open forests in the semi-arid region near the village of Las Flores.

Pithecolobium longifolium (H. & B.) Standl. Small tree about 6 meters tall. Flowers greenish white, in globose, head-like clusters; pods scarlet; seeds black. Frequent in forests on the foothills back of La Ceiba.

Pithecolobium tenellum (Britt. & Rose) Standl. Small tree about 6 meters tall. Flowers greenish white, in globose, head-like clusters; pods scarlet; seeds black. Frequent in forests on the foothills back of La Ceiba.

POEPPIGIA Presl

Poeppigia procera Presl. A handsome tree about 12 meters tall and 35 cm. in diameter. Leaves light green, pinnate; leaflets numerous, about 1 cm. long; flowers yellow, 1 cm. long, numerous, in paniculately racemose clusters. In open woodland near the village of Medina, at about 180 meters altitude.

SWARTZIA Schreb.

Swartzia simplex (Swartz) Spreng. Small tree about 7 meters tall. Leaves with a solitary, large leaflet; flower buds globose; corolla yellow. Frequent along the Danto River, slopes of Mt. Cangrejal.

VIGNA Savi

Vigna repens (L.) Kuntze. Trailing, herbaceous vine with yellow flowers. On sandy ocean beach near the village of Salado.

Vigna vexillata (L.) A. Rich. Herbaceous vine with hairy stem. Flowers white to light lavender. Climbing in thickets, foothills back of La Ceiba.

OXALIDACEAE

BIOPHYTUM DC.

Biophytum dendroides (HBK.) DC. Herb about 15 cm. tall; leaves clustered at the top of the stem; flowers pink. Along the margin of the Danto River, slopes of Mt. Cangrejal, at 150 meters altitude.

OXALIS L.

Oxalis Neaei DC. Herb 30 cm. high or more; flowers yellow. Common in open areas throughout the region.

RUTACEAE

AMYRIS L.

Amyris sylvatica Jacq. Small tree about 3.5 meters tall. Leaves 3-foliolate. In semi-arid woodland region near Coyoles.

CITRUS L.

Citrus sinensis Osbeck. Seedling trees encountered frequently along the trails and in open forest areas throughout the region.

ZANTHOXYLUM L.

Zanthoxylum Fagara (Jacq.) Sarg. Tree about 4.5 meters tall. Fruit small, green. Frequent in open forest in the semi-arid region near the village of Medina.

BURSERACEAE

BURSERA Jacq.

Bursera Simaruba (L.) Sarg. Tree up to 15 meters tall or more; bark smooth, copper-brown, peeling in thin sheets. Frequent in semi-arid forest area near Coyoles; also in forests on the foothills back of La Ceiba.

MELIACEAE

GUAREA Allem.

Guarea excelsa HBK. Tree about 6 meters tall or more. Flowers small, white, in many-flowered, slender panicles up to 25 cm. long. In deep forest along the Danto River, slopes of Mt. Cangrejal, at 150 to 300 meters altitude.

MELIA L.

Melia Azedarach L. Small tree about 6 meters tall and 15 cm. in diameter; flowers lavender; fruit yellow. Naturalized in the foothills back of La Ceiba.

SWIETENIA Jacq.

Swietenia macrophylla King. Large forest tree with trunk 90 cm. or more in diameter. Abundant in certain parts of the Aguán River Valley, where mahogany is being cut commercially.

TRICHILIA L.

Trichilia acutanthera C. DC.(?) Tree about 6 meters tall. Capsule less than 1 cm. long, yellow. On the banks of the Salado River about 20 kilometers west of La Ceiba; also in forests on the lower slopes of Mt. Cangrejal.

Trichilia havanensis Jacq. Small tree about 4.5 meters tall and 15 cm. in diameter. Leaves pinnate, the leaflets mostly 5–7; capsule small. In forest on the foothills back of La Ceiba.

MALPIGHIACEAE

BYRSONIMA Rich.

Byrsonima crassifolia (L.) DC. Small tree or shrub about 4.5 meters tall. Flowers showy, at first yellow, later turning reddish orange, in terminal racemes; fruit fleshy, yellow, edible. Abundant throughout the plains and foothills.

HETEROPTERIS HBK.

Heteropteris laurifolia (L.) Juss. Woody vine. Flowers yellow; fruit a samara. In thickets near the village of Las Flores, at 180 meters altitude.

HIRAEA Jacq.

Hiraea obovata (HBK.) Ndzu. Shrub or small tree about 3 meters tall. Flowers yellow; fruit a samara. In forests along the Danto River, slopes of Mt. Cangrejal, at 180 meters altitude.

STIGMAPHYLLON Juss.

Stigmaphyllon puberum (Rich.) Juss. A large, woody vine. Flowers large and showy, the petals orange and red; fruit a samara. Climbing in thickets along the Danto River, slopes of Mt. Cangrejal, at 210 meters altitude.

TETRAPTERIS Cav.

Tetrapteris Schiedeana Schl. & Cham. Woody vine. Flowers yellow; fruit a samara. Climbing in thickets along the Danto River on the slopes of Mt. Cangrejal, at 180 meters altitude.

VOCHYSIACEAE

VOCHYSIA Juss.

Vochysia hondurensis Sprague. Tree about 12 meters tall and 35 cm. in diameter. Fruit 3-angled, 3 cm. long or more. In forests on the lower slopes of Mt. Cangrejal.

DICHAPETALACEAE

DICHAPETALUM Thou.

Dichapetalum Donnell-Smithii Engler. Somewhat scandent shrub about 7 meters tall. Leaves oblong-obovate, 10 to 15 cm. long, abruptly acute. In deep forests along the Danto River on the slopes of Mt. Cangrejal, at 300 meters altitude.

EUPHORBIACEAE

ACALYPHA L.

Acalypha costaricensis (Kuntze) Knobl. Plants herbaceous or slightly woody at the base, about 1 meter tall. Staminate spikes slender; pistillate flowers in open panicles; fruit red. In open areas in the forest, slopes of Mt. Cangrejal back of La Ceiba. Common.

Acalypha diversifolia Jacq. Shrub or small tree about 4.5 meters tall. Flowers in slender spikes, small, greenish. Common on the slopes back of La Ceiba, up to 300 meters altitude, also frequent in the semi-arid woodland about Coyoles, and on the slopes above Las Flores, at 270 meters altitude.

Acalypha villosa Jacq. Shrub or small tree up to 7 meters tall. Staminate spikes long and slender; pistillate flowers in panicles. In thickets along the Danto River, slopes of Mt. Cangrejal, at 150 meters altitude; also in the semi-arid woodland region near Coyoles.

CROTON L.

Croton ciliato-glandulosus Ortega. Shrub, mostly 1 meter tall or less. Flowers greenish white. In sandy soil, semi-arid region near Coyoles.

Croton flavens L. Shrub, 1 meter tall or less, densely covered with stellate hairs. Flowers yellowish. In semi-arid woodland region near Coyoles.

Croton glabellus L. Small tree about 7 meters tall and 30 cm. in diameter, covered with small, brownish scales. Flowers white; fruit green, rough, about 1 cm. in diameter. In forest, foothills back of La Ceiba.

Croton lobatus L. Herb about 1 meter tall. Leaves 3-lobed. On sandy bar in the Aguán River, near Coyoles.

Croton punctatus Jacq. A low, more or less decumbent shrub 45 to 60 cm. tall, densely covered with brown, stellate scales. Flowers yellowish. In sandy soil near the seashore, vicinity of La Ceiba.

Croton repens Schlecht. Shrub about 1 meter tall, moderately covered with stellate hairs. Leaves shallowly dentate, rounded-ovate; flowers white. In rocky soil, mountain slope above the village of Las Flores, at 330 meters altitude.

DALECHAMPIA L.

Dalechampia spathulata (Scheidw.) Baill. Small shrub 30 to 60 cm. tall. Bracts dark red. In rich soil in deep forest near the Danto River, slopes of Mt. Cangrejal back of La Ceiba.

EUPHORBIA L.

Euphorbia heterophylla L. Herb up to 1.5 meters tall. Leaves variable in shape and size, the uppermost, which subtend the flowers, frequently pink at the base. Common along streams in the foothills back of La Ceiba.

Euphorbia nereifolia L. Tree-like, about 3.5 meters tall, with many ascending, longitudinally ridged branches, armed with short spines on the ridges. Leaves obovate, more or less terminally clustered. In thicket in semi-arid upland near Las Flores.

JATROPHA L.

Jatropha Curcas L. Tree about 4.5 meters tall and 20 cm. in diameter. Leaves large, lobed and more or less resembling those of a maple; fruit about 2.5 cm. long, fleshy. In forest, foothills back of La Ceiba.

Jatropha gossypiifolia L. Shrub about 1 meter tall. Leaves 3- or 5-lobed, marginally glandular-ciliate; flowers red. In sandy soil, thicket near the Aguán River below Coyoles.

Jatropha urens L. Shrub about 2 meters tall or less. Leaves lobed; flowers white, conspicuous. Branches and leaves covered with stiff, stinging hairs which produce an exceedingly painful sensation. Frequent throughout the semi-arid region about Coyoles.

MABEA Aubl.

Mabea occidentalis Benth. Shrub or small tree about 3 meters tall. Leaves 12 to 18 cm. long, oblong, abruptly acuminate; flowers in terminal, long-stalked, paniculate racemes. In forest on the slopes of Mt. Cangrejal, at 240 meters altitude.

PEDILANTHUS Poit.

Pedilanthus tithymaloides Poit. Slender, nearly leafless shrub about 1 meter tall. Stems smooth, green; flowers small,

subtended by a conspicuous, slipper-like involucral bract. Frequent throughout the semi-arid woodland region about Coyoles.

PHYLLANTHUS L.

Phyllanthus Bartlettii Standl. Low shrub, 30 to 45 cm. tall. Branches very slender; leaves thin, lanceolate, acute; flowers small, greenish white. In thickets on the lower slopes of Mt. Cangrejal, back of La Ceiba. Known previously only from Guatemala.

Phyllanthus nobilis (L. f.) M. Arg. var. **hypomalacus** Standl. Tree about 7 meters tall and 20 cm. in diameter. In open forest area near the village of Las Flores.

RICINUS L.

Ricinus communis L. Herb about 3 meters tall, the stems somewhat woody below. Forming dense thickets in open, sandy areas near the Aguán River below Coyoles.

SAPIUM Jacq.

Sapium jamaicense Swartz. Tree about 10 meters tall; wood very brittle; sap milky, abundant; flowering spikes long and slender. At edge of forest on the lower slopes of Mt. Cangrejal.

ANACARDIACEAE

ANACARDIUM L.

Anacardium occidentale L. Tree about 6 meters tall and 15 cm. in diameter. Fruit edible. On the bank of the Salado River, about 20 kilometers west of La Ceiba.

MANGIFERA L.

Mangifera indica L. Several large trees were observed as escapes on the plains and lower slopes about La Ceiba.

SPONDIAS L.

Spondias Mombin L. Fine, smooth-barked tree about 18 meters tall and 90 cm. in diameter. Flowers small, greenish, in large, terminal, paniculate clusters. Fruit edible. Frequent on the plains and lower foothills about La Ceiba.

Spondias purpurea L. Small tree about 4.5 meters tall. Fruit red, edible. In open forest near the village of Las Flores.

SAPINDACEAE

CUPANIA L.

Cupania glabra Swartz. Small tree about 6 meters tall. Flowers yellowish white, small, in large, paniculate clusters; fruit a brown, scurfy, 3-seeded capsule. In forest, foothills near the Cangrejal River back of La Ceiba; also in open forests in semi-arid upland near the village of Las Flores, at 200 meters altitude.

PAULLINIA L.

Paullinia pinnata L. Coarse, woody vine. Leaves pinnate, the rachis winged. Inflorescence paniculately racemose, slender, with one or more tendrils; flowers white; fruit red. Climbing in thickets in the foothills back of La Ceiba; also in semi-arid woodland region near Coyoles.

VITACEAE

CISSUS L.

Cissus rhombifolia Vahl. Woody vine. Stem 4-angled, winged; leaves 3-foliolate; pedicels, peduncles, and flower buds bright red. Climbing in thickets on the foothills of Mt. Cangrejal.

Cissus salutaris HBK. Woody vine. Leaves 3-foliolate; parts of flower clusters red. Climbing in thickets on the rocky mountain slope in open pine forest above the village of Las Flores, at 330 meters altitude.

Cissus sicyoides L. Woody vine. Leaves simple, very hairy; flowers greenish; fruit fleshy, black. Climbing in thickets near La Ceiba; also in thickets along the Aguán River near Coyoles, and near the village of Medina in the semi-arid region.

VITIS L.

Vitis tiliifolia Humb. & Bonpl. Large, woody vine. Leaves broadly ovate, shallowly lobed, densely hairy; flowers small, green; fruit fleshy, small, black. Climbing in thickets, foothills back of La Ceiba.

TILIACEAE

BELOTIA A. Rich.

Belotia Campbellii Sprague. Tree about 4.5 meters tall. Leaves oblong, sharply acuminate, pubescent with simple or branching hairs; fruit about 1 cm. long, dry, 2-celled. In forests on the

rocky ridge back of Roma, about 25 kilometers east of La Ceiba, at 270 meters altitude.

LUEHEA Willd.

Luehea candida (DC.) Mart. Tree about 9 meters tall and 30 cm. in diameter. Leaves oval-obovate, densely pubescent with stellate hairs; flowers about 5 cm. wide, handsome; petals at first white, turning brown; fruit dry and woody, about 6 cm. long, splitting into 5 lobes. Frequent in the semi-arid upland region of the Aguán River Valley.

Luehea speciosa Willd. Tree about 6 meters tall. Leaves oval-obovate, sharply acuminate, pubescent with stellate hairs; flowers white; fruit dry and woody, about 3 cm. long. On the ridge back of Roma, about 25 kilometers east of La Ceiba, between 300 and 600 meters altitude.

MUNTINGIA L.

Muntingia Calabura L. Tree about 6 meters tall and 30 cm. in diameter. Leaves oblong-lanceolate, densely hairy with branched hairs; corolla white; fruit fleshy, red, edible. In sandy soil in Aguán River bottoms near Coyoles.

TRIUMFETTA L.

Triumfetta polyandra DC. Herbaceous, about 1 meter high; in open forest, rocky mountain slope, above Las Flores, 300 meters, No. 8167. Also Monte de la Flor, Tegucigalpa, at 960 meters, pine and oak region, December, 1937, *Christine & Wolfgang von Hagen* 1213; a shrub of 30–60 cm.; vernacular name "oreja de coyote." I was at first inclined to believe that the Honduran collections represented a new species, and both were given a provisional name, but further study convinces me that the material is actually referable to *T. polyandra*, which is rather widely distributed in Mexico, and occurs also in Guatemala.—PAUL C. STANDLEY.

MALVACEAE

ANODA Cav.

Anoda cristata (L.) Schlecht. Herb about 45 cm. tall. Leaves lobed; flowers light blue. In waste areas about La Ceiba.

MALVAVISCUS Cav.

Malvaviscus palmanus D. Sm. Small tree or shrub about 3.5 meters tall. Leaves long-petioled, ovate; flowers bright red. In

moist, shady ravines on mountain slope near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

PAVONIA Cav.

Pavonia rosea Schlecht. Herb, somewhat woody at the base, about 1 meter tall; corolla rose. In sandy soil near the Salado River, about 20 kilometers west of La Ceiba.

SIDA L.

Sida cordifolia L. Herb, somewhat woody at the base, about 1 meter tall; flowers salmon-colored. In sandy soil, waste areas in semi-arid region about Coyoles.

Sida rhombifolia L. Herb about 1 meter tall, somewhat woody at the base; flowers buff. On mountain slope near Puente Alto, about 50 kilometers east of La Ceiba, at 250 meters altitude.

BOMBACACEAE

CEIBA Medic.

Ceiba pentandra (L.) Gaertn. A very large, smooth-barked tree, commonly with wide buttresses. Occasional on the plains and in forest on the foothills. Originally abundant in the Aguán River Valley, but large numbers of the trees have been cut.

HAMPEA Schlecht.

Hampea stipitata Wats. Tree about 6 meters tall. Leaves more or less stellate-pubescent; fruit a globose capsule. In rocky ravines on mountain slope near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

OCHROMA Swartz

Ochroma limonensis Rowlee. Tree about 9 meters tall. Occasional on the plains and lower foothills about La Ceiba.

QUARARIBEA Aubl.

Quararibea Yunckeri Standl., sp. nov.—Arbor 12-metralis, trunco 45 cm. diam., ramulis gracilibus subteretibus nigris vel fuscis rimosis minute adpresso-lepidotis; folia mediocria breviter petiolata coriaceo-membranacea, petiolo 5–8 mm. longo dense minute adpresso-lepidoto; lamina anguste oblonga 10–18 cm. longa 3–5.5 cm. lata subabrupte longiuscule acuminata, basi obtusa vel acutiuscula,

integra, supra flavido-viridis sublucida fere glabra sed ad nervos sparse minute lepidota, nervis manifestis sed vix elevatis, subtus concolor glabra vel ad nervos sparse lepidota, in axillis nervorum domatiata atque dense barbata, nervis lateralibus utroque latere ca. 5 subarcuatis prominentibus valde adscendentibus, venis prominulis laxissime reticulatis; flores axillares et e nodis defoliatis nascentes singuli breviter crasseque pedunculati, bracteolis parvis late ovatis acutis adpressis; alabastra obtusissima; calyx infundibuliformis fere 1 cm. longus fauce 5 mm. latus extus densissime adpresseque stellato-lepidotus, superne breviter lobatus, lobis rotundatis intus sericeis; petala alba calyce multo longiora angusta stellato-pilosula; tubus staminalis ca. 7 mm. longe exsertus stellato-pilosulus. —Honduras: River bank, foothills back of La Ceiba, Dept. Atlántida, June 25, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8010 (type in Herb. Field Mus.).

The flowers are much smaller than those of most other Central American representatives of the genus.

STERCULIACEAE

GUAZUMA Adans.

Guazuma ulmifolia Lam. Tree about 6.5 meters tall. Leaves pubescent with stellate hairs; corolla yellow; fruit a subglobose, rough, woody capsule. Frequent in the semi-arid upland region about Las Flores, up to 360 meters in altitude.

HELICTERES L.

Helicteres guazumaefolia HBK. Shrub or small tree about 3 meters tall. Leaves oval-obovate, serrate, with stellate pubescence; flowers tubular; corolla red; stamen tube much exserted; fruit woody and spirally twisted like the threads of a screw. In semi-arid upland region near the village of Medina, at 180 meters altitude.

STERCULIA L.

Sterculia apetala (Jacq.) Karst. Tree about 12 meters tall. Leaves palmately 3- or 5-lobed, densely pubescent beneath with stellate hairs. In forests on the lower slopes of Mt. Cangrejal.

DILLENIACEAE

CURATELLA L.

Curatella americana L. Small tree about 4.5 meters tall. Leaves rough and pubescent with scattered, stellate hairs; fruit

bright red within. On rocky mountain slopes in open pine forest above the village of Las Flores, at 330 meters altitude.

DAVILLA Vand.

Davilla Kunthii St. Hil. Tree-like, about 6 meters tall and 20 cm. in diameter. Leaves thick, pinnately nerved, very rough, with short, stiff, bristle-like hairs; flowers in a large, terminal, densely hairy panicle; fruit orange-colored. In forests on the foothills back of La Ceiba.

ACTINIDIACEAE

SAURAUIA Willd.

Saurauia Englesingii Standl. Tree about 10 meters tall. Leaves large, obovate, rough-bristly; flowers showy, in terminal, densely hairy panicles; corolla white; stamens yellow. In deep forest near the falls of the Danto River, slopes of Mt. Cangrejal, at 360 meters altitude.

Saurauia pauciserrata Hemsl. Tree about 7 meters tall. Leaves light green, the petioles more or less reddish; panicles densely covered with stellate or chaff-like hairs; flowers white, very fragrant; stamens yellow; fruit fleshy, edible. In deep forests on the slopes of Mt. Cangrejal, at 180 and 330 meters altitude; also in ravine near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

GUTTIFERAE

CLUSIA L.

Clusia flava Jacq. Tree about 9 meters tall and 30 to 35 cm. in diameter; sap yellow and very adhesive. Leaves thick and more or less leathery; fruit opening star-shaped when ripe. In semi-arid woodland region near Coyoles.

Clusia mexicana Vesque. Tree about 7 meters tall. Leaves thick and somewhat fleshy; fruit subglobose, leathery. In deep forests on the slopes of Mt. Cangrejal, at 300 meters altitude.

Clusia utilis Blake. Tree about 6 meters tall. Leaves obovate, obtuse, thick and more or less leathery; flowers flesh-colored. In deep forests, slopes of Mt. Cangrejal, at 300 meters altitude.

SYMPHONIA L. f.

Symphonia globulifera L. f. Tree about 15 meters tall and 45 cm. in diameter. Buds and flowers bright red; tips of perianth

lobes black. A handsome and conspicuous tree when in flower. Frequent on the plains and lower slopes about La Ceiba.

BIXACEAE

BIXA L.

Bixa Orellana L. Small tree about 4.5 meters tall. Leaves ovate, attenuate-acuminate; capsule bristly; seeds red. In thickets on the foothills back of La Ceiba.

COCHLOSPERMACEAE

COCHLOSPERMUM Kunth

Cochlospermum vitifolium (Willd.) Spreng. Tree about 7 meters tall. Leaves palmately 5- or 7-lobed; fruit a large capsule; seeds covered with long, white hairs. In open forest back of Roma, about 25 kilometers east of La Ceiba.

VIOLACEAE

GLOEOSPERMUM Tr. & Planch.

Gloeospermum boreale Morton, sp. nov.—Arbor parva, ramulis griseis, teretibus, ca. 3 mm. diam., glaberrimis, lenticellis nullis; folia alterna, disticha, breviter petiolata, petiolo glabro, usque ad 8 mm. longo, supra valde canaliculato; lamina foliorum anguste oblonga, usque ad 18 cm. longa et 5.5 cm. lata, acuminata, basi obtusa vel rarius rotundata, remote dentata, chartacea, supra nitens, utrinque glaberrima, venis primariis subtus prominentibus, venulis reticulatis; inflorescentia axillaris, cymosa, semel vel raro bis furcata, vix 1 cm. longa, rhachibus et bracteolis parvis rotundis minute puberulis, pedicellis supra basin articulatis, ca. 6 mm. longis, glabris; sepala 5, flavescenti-viridia, basi connata, imbricata, orbicularia, rotundata, inaequalia, 2 exteriora minora, ca. 1.2 mm. longa et lata, 3 interiora ca. 1.7 mm. longa, omnia utrinque glabra, minute ciliolata; alabastra oblonga, acuta; petala flava, libera, imbricata, oblonga, ca. 6.5 mm. longa, 3 mm. lata, glabra; filamenta basi in tubum brevem integrum connata; antherae ca. 1 mm. longae, connectivo glabro, in appendicem albam, ca. 1 mm. longam, membranaceam, ovatam, terminalem producto; ovarium glabrum; bacca pyriformis, ca. 16 mm. longa et 14 mm. lata, glabra, laevis, stylo persistente coronata.—Honduras: Along the Danto River, near Mt. Cangrejal, Department of Atlántida, July 30, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8687 (type in U. S. National Herbarium, No. 1,746,851; duplicate in Herb. Field Mus.).

Gloeospermum is a genus new to North America, the six or seven previously known species being confined to Colombia, Peru, and Amazonian Brazil. Dr. H. Melchior has done much to clarify its status in three excellent papers (Revision der Gattung *Gloeospermum* Trian. & Planch., Notizbl. Bot. Gart. Berlin 8: 617–624. 1923; "Uber die Zugehörigkeit von *Alsodeia andina* Tul. and *A. Gossypium* Tul. zur Gattung *Gloeospermum*," op. cit. 9: 56–59. 1924; "Uber zwei neue Arten und die Morphologie der Blütenstände der Gattung *Gloeospermum* nebst einer systematischen Ubersicht über die Gattung," op. cit. 9: 157–167. 1924). In the latter he keys seven species, one of which is dubious. Of these the one most nearly related to *G. boreale* seems to be *G. Ulei* Melch., from Rio Acre, Amazonas, Brazil, of which a specimen of the type collection (*Ule* 9622) is in the National Herbarium. This differs in having the calyx lobes strongly strigose on the back and rather obviously ciliate. The branchlets are puberulent, in contrast to the completely glabrous branches of *G. boreale*.

There is some doubt as to the proper reference of *G. Ulei* to *Gloeospermum*. According to Dr. A. Ducke, this species constitutes a distinct monotypic genus *Rinoreocarpus*, distinguished from *Gloeospermum* and related to *Rinorea* by having a three-valved, dehiscent capsule. In *G. boreale* I have been unable to see any evidence that the fruit is other than baccate, as in typical *Gloeospermum*. In drawing up a description of the flowers, only fairly well developed buds have been available, so the measurements given may not be found entirely accurate.

RINOREA Aubl.

Rinorea guatemalensis (Wats.) Bartlett. Shrub or small tree up to 6 meters tall. Flowers white, drooping; capsule 3-seeded. In forests on the slopes of Mt. Cangrejal, at 180 meters altitude; also on the ridge back of Roma, about 25 kilometers east of La Ceiba, at 150 to 240 meters altitude.

FLACOURTIACEAE

CARPOTROCHE Endl.

Carpotroche platyptera Pittier. Small tree about 6 meters tall. Leaves large; flowers small, greenish white; fruit about 3 cm. wide, with several thin, paper-like wings and numerous seeds, borne on the stem. In rocky ravine on the mountain slope near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

CASEARIA Jacq.

Casearia aculeata Jacq. Tree about 4.5 meters tall. Flowers greenish white; fruit with an orange and red aril. In thickets on the plains and lower mountain slopes about La Ceiba.

Casearia elegans Standl., sp. nov.—Frutex 1–1.5 m. altus, ramis gracilibus subteretibus ferrugineis lenticellis parvis pallidis conspersis, primo plus minusve puberulis vel pilosulis cito glabratis, internodiis brevibus; folia mediocria brevissime petiolata membranacea, petiolo usque 5 mm. longo; lamina oblongo-oblanceolata vel lanceolato-oblonga 10–14 cm. longa 3–5.5 cm. lata sensim vel subabrupte acuminata vel longiacuminata, basi acuta vel saepius basin versus sensim angustata, glabra, in toto margine serrata vel serrulata, apicibus dentium incurvis, sparse pellucido-lineata, in sicco laete viridis, costa subtus elevata gracili, nervis lateralibus utroque latere ca. 8 angulo lato saepe fere recto abeuntibus prominentibus irregularibus curvis, venis laxe reticulatis prominulis; flores axillares singuli vel paucifasciculati, pedicellis gracillimis 5–7 mm. longis (in statu fructifero ad 9 mm.) dense breviter pilosulis; sepala alba obovato-oblonga 7 mm. longa obtusa vel anguste rotundata tenuia extus dense minute puberula; stamina 6 sepalis bene breviora, filamentis filiformibus glabris, staminodiis filamentis duplo brevioribus linearibus dense albido-pilosis; ovarium glabrum; fructus ellipsoideus 2.5 cm. longus 1.4 cm. crassus, apice apiculatus, basi acutiusculus.—Honduras: Foothills back of La Ceiba, Dept. Atlántida, August 4, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8804 (type in Herb. Field Mus.); also No. 8606 from the same locality, growing in a thicket. In thicket, foothills, lower slopes of Mt. Cangrejal, No. 8605; fruit red when ripe.

An isolated species, outstanding because of the very large fruit and the unusually large flowers.

Casearia javitensis HBK. Shrub or small tree about 6 meters tall. Flowers very small, greenish white, numerous and clustered in the leaf axils; capsules red. On river banks back of La Ceiba.

Casearia mollifolia Standl., sp. nov.—Frutex vel arbuscula 1–4-metralis, ramulis tortuosis subteretibus brunneo-ferrugineis dense molliter patenti-pilosis, internodiis brevibus; folia mediocria brevissime petiolata tenuiter membranacea, petiolo vix ad 3 mm. longo dense piloso; lamina elliptica vel oblongo-elliptica, rare obovato-elliptica 5–9 cm. longa 3–5 cm. lata obtusa vel obtuse apicata, basi obtusa vel anguste rotundata, in toto margine inconspicue adpresso-crenata, dense pellucido-punctata, supra glabrata sed ad

nervos breviter pilosa sublucida, costa nervisque prominulis, subtus ubique dense breviter velutino-pilosa, costa gracili prominente, nervis lateralibus utroque latere ca. 9 angulo lato adscendentibus arcuatis irregularibus; inflorescentiae cymoso-corymbosae pauci- vel multiflorae breviter pedunculatae axillares densae vel sublaxae usque 2 cm. longae, floribus breviter vel longiuscule pedicellatis, pedicellis ut rami dense pilosis; sepala in sicco fusca obovata 3 mm. longa obtusa dense puberula; stamina 8; stigma capitatum; capsula immatura 5 mm. diam. subglobosa apice rotundata sparse pilosula vel fere glabra.—Honduras: In open forest near Medina, Dept. Yoro, in semi-arid region, alt. 170 meters, July 26, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8656 (type in Herb. Field Mus.). Also Nos. 8643 and 8641, from the same region.

This proposed species belongs to the poorly understood group of *Casearia nitida* (L.) Jacq., in which it is notable chiefly for the unusually abundant, soft pubescence covering most parts of the plant.

Casearia phegocarpa Standl., sp. nov.—Frutex vel arbor 2–6-metralis, trunco 7 cm. et ultra diam., ramis gracillimis teretibus brunnescentibus lenticellis parvis pallidis conspersis, novellis minute puberulis, internodiis brevibus; folia inter minora breviter petiolata firme membranacea, petiolo gracili 3–5 mm. longo minute puberulo; lamina oblanceolato-oblonga vel lanceolato-oblonga 7–11.5 cm. longa 2–3.3 cm. lata longe angusteque acuminata vel caudato-acuminata, acumine ipso obtuso, basi acuta vel subacuminata, interdum basin versus longe attenuata, in toto margine arcte serrulata, ubique dense pellucido-punctata, utrinque glabra vel glabrata, subtus in axillis nervorum sparse obscure barbata, costa subtus elevata gracili, nervis lateralibus utroque latere ca. 8 angulo latiusculo adscendentibus arcuatis prominentibus, venis vix manifestis; flores in cymas parvas paucifloras brevissime pedunculatas dispositi (non visi) pedicellati, sepalis ovalibus ciliatis; fructus glaber rubescens in sicco 10–12 mm. longus et fere aequilatus, parte centrali turgida, angulis anguste (ca. 2 mm. late) alato-productis, apice retusus.—Honduras: Lancetilla Valley, near Tela, Dept. Atlántida, alt. 20–600 meters, 1927–28, *Paul C. Standley* 55212 (type in Herb. Field Mus.); also Nos. 54558, 54054, 53221, 56697, 52749. Tela, thicket near the beach, *Standley* 54258. Lancetilla, *A. M. Chickering* 150. Near bank of Tela River above Lancetilla, *Yuncker* 4624. Along river at Lancetilla, *W. D. Hottle* 102. In thicket on river bank, foothills back of La Ceiba, *Yuncker, Koepper & Wagner* 8006. In forest, slopes of Mt. Cangrejal, 150 meters, *Yuncker, Koepper & Wagner* 8387.

The shrub or small tree here described is common along the Atlantic coast of Honduras, where it grows commonly in wet thickets at or near the margins of streams. It has been confused heretofore by the writer with *Casearia arborea* (Rich.) Urban, and was listed under that name in the *Flora of the Lancetilla Valley* (Field Mus. Bot. 10: 289. 1931). Material from British Honduras, Costa Rica, and Panama likewise referred to *C. arborea* is different from *C. phegocarpa*, and probably also from true *C. arborea*. The latter is a species of the West Indies and northern South America, differing from the Honduran plant in having the leaves covered beneath with a dense, pale tomentum.

HASSELTIA HBK.

Hasseltia floribunda HBK. Small tree about 7 meters tall and 10 cm. in diameter. Leaves oval or elliptic-obovate, toothed, 3-nerved at the base; inflorescence paniculate; capsule about 4 mm. in diameter, minutely and densely pubescent. In forests, foothills back of La Ceiba; also in semi-arid woodland region near Coyoles.

LAETIA Loefl.

Laetia Thamnia L. Tree about 6 meters tall. Leaves with pellucid dots and lines; fruit 3-celled, about 2 cm. in diameter, minutely and densely pubescent. In forests, slopes of Mt. Cangrejal, at 270 meters altitude.

LUNANIA Hook.

Lunania piperoides Standl. Tree about 7 meters tall. Leaves much resembling those of species of *Piper;* flowers greenish white, short-pedicellate, in branching, spike-like racemes. On the rocky ridge back of Roma, about 25 kilometers east of La Ceiba, at 240 meters altitude.

PROCKIA L.

Prockia crucis L. Shrub or small tree about 3 meters tall; leaves and young branches densely and finely pubescent. Flowers white; stamens numerous. In semi-arid upland, open forest near Las Flores, at 180 to 240 meters.

TURNERACEAE

ERBLICHIA Seem.

Erblichia odorata Seem. Tree about 6 meters tall and 20 to 25 cm. in diameter; wood very hard. Flowers numerous, about 6 cm. long and as wide when open, reddish orange, with pleasant odor.

The tree is exceptionally handsome when in full flower and would make an excellent ornamental. A few specimens were discovered on the banks of the Salado River, about 20 kilometers west of La Ceiba.

PASSIFLORACEAE

PASSIFLORA L.

Passiflora coriacea Juss. Herbaceous vine. Leaves much wider than long, leathery, peltate; flowers comparatively small, greenish. Climbing in thickets on the foothills back of La Ceiba.

Passiflora foetida L. Herbaceous vine, with a disagreeable odor. Densely hairy, with many of the hairs gland-tipped; floral bracts fimbriately dissected, with the divisions gland-tipped; flowers comparatively small, greenish. Climbing over herbs and low shrubs in waste places about La Ceiba.

Passiflora serratifolia L. Herbaceous vine. Leaves oval-oblong, drying comparatively thin; petioles with numerous glands; flowers 5 to 6 cm. wide, pale lavender, handsome; fruit up to 10 cm. long, yellow, edible. Common in thickets on the foothills back of La Ceiba.

CARICACEAE

CARICA L.

Carica Papaya L. Small tree about 2.5 meters tall. Occasionally escaped plants were found on the plains and lower foothills about La Ceiba.

LOASACEAE

GRONOVIA L.

Gronovia scandens L. Herbaceous vine with abundant pubescence, the hairs on the stem with terminal hooks. Leaves deeply and palmately 3- or 5-lobed; flowers in corymbose clusters opposite the leaves, yellowish green; calyx tube about the ovary, with wing-like projections. Climbing in thickets on the plains near La Ceiba.

BEGONIACEAE

BEGONIA L.

Begonia glabra Aubl. Herbaceous vine, scrambling over rocks and climbing in trees. Flowers greenish white. In deep forest along the Danto River on the slopes of Mt. Cangrejal, at 360 meters.

Begonia nicaraguensis Standl. Stems rather stout, up to 1 meter tall. Flower stalks up to 60 cm. tall, the clusters large; cap-

sule wings short and blunt. In thickets, slopes of Mt. Cangrejal back of La Ceiba; also on the rocky bank of a mountain stream, foothills near the village of Medina, at 190 meters altitude.

Begonia squarrosa Liebm. Low herb. Petioles with numerous reflexed, fimbriate scales; leaf vein axils often red; flowers white

FIG. 7. *Cereus Yunckeri*, a tree-like cactus growing in the semi-arid region of the Aguán River Valley above Olanchito.

or somewhat pink on the outside; capsule wings acute. On mossy rocks, banks of the Danto River on slopes of Mt. Cangrejal, at 360 meters altitude.

CACTACEAE

ACANTHOCEREUS Britt. & Rose

Acanthocereus pentagonus (L.) Britt. & Rose. Stems 3-angled or infrequently 4-angled, up to 6 meters long or more, scram-

bling in trees and over shrubs, strongly armed with rigid spines up to 2 cm. long. Common in semi-arid woodland region near Coyoles.

CEREUS L.

Cereus (*Lemaireocereus*) **Yunckeri** Standl., sp. nov.—Arbor usque ad 10 m. alta, trunco 35 cm. diam., ramis numerosis valde adscendentibus crassis ca. 9-costatis, costis late triangularibus acutiusculis, intervallis latis sed acutis; areolae parvae ca. 3 mm. latae atque 1 cm. distantes, tomento brevi pallide brunnescenti obtectae; aculeae subporrectae ca. 6 aciculares ochraceae vel fusco-griseae rigidae usque 1.5 cm. longae; flores fructusque non visi.—Honduras: In woodland, semi-arid region near Coyoles, Dept. Yoro, June 28, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8257 (type in Herb. Field Mus.).

This is presumably the same species that occurs also in the desert region of Comayagua, where the plants are conspicuous. The relationship is with **Cereus Eichlamii** (Britt. & Rose) Standl., comb. nov. (*Lemaireocereus Eichlamii* Britt. & Rose, Cactaceae 2: 89. *f. 132.* 1930), a common species of the more arid parts of Guatemala, to which, indeed, it may be too close for permanent specific segregation.

DEAMIA Britt. & Rose

Deamia testudo (Karw.) Britt. & Rose. Stems angled; spines rather soft. Flowers about 18 cm. long, handsome, white; stamens yellow. Climbing in trees in forests on the lower slopes of Mt. Cangrejal, at 150 meters altitude.

EPIPHYLLUM Haw.

Epiphyllum guatemalense Britt. & Rose. Epiphyte. Flowers white, 25 cm. long or more, rather showy. Common on trees on the lower slopes of Mt. Cangrejal back of La Ceiba; also in semi-arid woodland region about Coyoles.

Epiphyllum Pittieri (Weber) Britt. & Rose. Epiphytic. Flowers white. On trees in forests, foothills back of La Ceiba.

Epiphyllum stenopetalum (Foerst.) Britt. & Rose. Epiphytic. Buds red; flowers white. Pendent from branches of trees in the forest on the lower slopes of Mt. Cangrejal, at 150 meters altitude.

OPUNTIA Mill.

Opuntia hondurensis Standl., sp. nov.—Arbor vel arborescens, usque ad 9 m. alta, trunco ad 30 cm. diam., coma profuse ramosa densa; articuli pallide virides glabri obovati vel oblongo-obovati,

13–22 cm. longi 7 cm. lati et ultra crassi, areolis modice distantibus ca. 3 mm. diam.; aculeae in areola ca. 12 maxime inaequales graciles subteretes subferrugineae vel fusco-ferrugineae, longioribus 2–2.5 cm. longis divaricatis.—Honduras: In woodland, semi-arid region near Coyoles, Dept. Yoro, June 27, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8258 (type in Herb. Field Mus.).

Although the material and data at hand are but fragmentary, it seems worth while to assign a name to the tree *Opuntia* of the

FIG. 8. *Opuntia hondurensis*, a large plant, often tree-like, which occurs abundantly in the semi-arid region of the Aguán River Valley above Olanchito.

Aguán Valley, which presumably is the same as that of the Comayagua Desert of Honduras, and perhaps also as that of the Motagua Valley of Guatemala. Tree Opuntias form a conspicuous feature of the landscape in all these regions, although one will search in vain in Britton and Rose's account of the Cactaceae for mention of a tree *Opuntia* in Central America. The species here described is a true tree, with a massive, columnar trunk and a large, dense, rounded crown.

RHIPSALIS Gaertn.

Rhipsalis Cassutha Gaertn. Epiphytic. Stems slender, terete, forming large, pendent clusters; berries small, white, fleshy. On trees in forests on the lower slopes of Mt. Cangrejal.

Rhipsalis coriacea Polak. Epiphytic. Stems terete, the lateral branches flattened, up to about 2 cm. wide; berries small, white, fleshy. Pendent on trees, forests on the foothills of Mt. Cangrejal, back of La Ceiba.

SELENICEREUS Britt. & Rose

Selenicereus hondurensis (Schum.) Britt. & Rose. Vine. Stems rather slender, round, covered with numerous moderately soft spines. Scrambling over rocks and climbing in trees, semi-arid forest region near the village of Las Flores, at 285 meters altitude.

Selenicereus Macdonaldiae (Hook.) Britt. & Rose. Vine. Stem angled, almost spineless. Climbing in trees, forests on slopes of Mt. Cangrejal, at 240 meters altitude.

Selenicereus sp. Vine. Stems angled, almost spineless. Climbing trees, semi-arid woodland region near Coyoles.

Selenicereus sp. Vine. Stems angled, the spines comparatively soft. Climbing in trees, forests on the lower slopes of Mt. Cangrejal.

LYTHRACEAE

AMMANNIA L.

Ammannia coccinea Rottb. Herb 1 meter tall or less. Leaves opposite, sessile, clasping; flowers dark pink. Edge of irrigation canal near Coyoles.

CUPHEA Adans.

Cuphea hyssopifolia HBK. Small shrub 30 to 60 cm. tall. Leaves small, narrowly elliptic; flowers lavender. On rocky banks of the Danto River, lower slopes of Mt. Cangrejal back of La Ceiba.

LECYTHIDACEAE

ESCHWEILERA Mart.

Eschweilera hondurensis Standl., sp. nov.—Arbor 9-metralis, ramulis gracilibus fusco-ferrugineis, novellis ochraceis primo minute puberulis cito glabratis, internodiis brevibus; folia inter minora breviter petiolata papyracea, petiolo gracili 5–7 mm. longo supra late canaliculato; lamina anguste oblonga 9.5–14 cm. longa 3–4 cm. lata acuta vel subacuminata, apice ipso obtuso, basi rotundata vel obtusa, glabra, supra griseo-viridis vix lucida, costa gracili elevata, nervis venulisque prominulis, subtus concolor, costa elevata, nervis lateralibus utroque latere ca. 12 tenerrimis prominulis angulo fere recto divergentibus arcuatis, venulis prominulis arcte reticulatis;

pedicelli fructiferi incrassati ca. 1.5 cm. longi; pyxis coriaceo-lignescens turbinato-globosa 2.5 cm. lata, 2 cm. alta vel paullo ultra, dorso convexa, margine calycari orificio 5–7 mm. distante, dentium rudimentis in cristam transversam triangulari-lobatam extensis; operculum rotundato-convexum apice crasse breviter umbonatum.—Honduras: Bank of stream, lower slopes of Mt. Cangrejal, near La Ceiba, Dept. Atlántida, August 6, 1938, *T.G. Yuncker, J. M. Koepper & K. A. Wagner* 8829 (type in Herb. Field Mus.).

This is the northernmost species of *Eschweilera* that has been discovered.

COMBRETACEAE

COMBRETUM L.

Combretum Cacoucia Exell. Stout, woody vine, the young growth densely brown-pubescent. Flowers large, red, in terminal, bracteate racemes; bracts large, lanceolate. Climbing in thickets on the banks of the Salado River, about 20 kilometers west of La Ceiba.

Combretum mexicanum H. & B. Large, woody vine. Leaves oblong or oval-obovate, abruptly pointed. Flowers small, white, in large, branching, terminal or axillary clusters; fruit greenish red, 4-winged or angled. In thickets on slopes of Mt. Cangrejal back of La Ceiba; also on the Salado River, about 20 kilometers west of La Ceiba; and in semi-arid woodland region near Coyoles.

TERMINALIA L.

Terminalia Catappa L. Tree 12 meters tall; branches arranged in definite and characteristic whorls. Leaves large, obovate, pinnately nerved; flowers small, white, in long, spike-like clusters; fruit compressed, two-edged, drupe-like, with thin, reddish flesh, edible. Planted about dwellings and common on the plains about La Ceiba.

MYRTACEAE

EUGENIA L.

Eugenia axillaris (Swartz) DC. Tree about 7 meters tall. Fruit at first yellow, finally black, about 1 cm. in diameter, fleshy. Frequent on the slopes of Mt. Cangrejal back of La Ceiba.

Eugenia ceibensis Standl., sp. nov.—Frutex 2.5 m. altus, ramis gracilibus teretibus ochraceis minute puberulis vel glabratis, internodiis 4–6 cm. longis; folia mediocria breviter petiolata chartacea, petiolo gracili 6–8 mm. longo minute puberulo vel glabrato;

lamina late elliptica vel ovato-elliptica 8.5–12.5 cm. longa 5–7 cm. lata subabrupte acuminata, acumine ipso obtuso, basi late cuneato-obtusa, glabra, supra in sicco laete viridis, costa subimpressa, nervis teneris prominentibus, subtus paullo pallidior, costa gracili prominente, nervis lateralibus utroque latere ca. 10 teneris angulo lato adscendentibus fere rectis, venis teneris laxe reticulatis, costa prope basin laminae minute tuberculata; inflorescentiae axillares brevissime racemosae petiolo vix longiores 2–5-florae, rhachi minute puberula, pedicellis usque 4 mm. longis glabris, bracteolis rotundatis 1.5 mm. longis; sepala rotundata 2 mm. longa punctata, petalis albis sepalis longioribus.—Honduras: In thicket, foothills back of La Ceiba, Dept. Atlántida, July 8, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8309 (type in Herb. Field Mus.).

Somewhat resembling the genus *Malpighia* in its foliage, noteworthy for the rather large and, when dried, bright green leaves, and for the small inflorescences.

Eugenia coyolensis Standl., sp. nov.—Arbor 4.5 m. alta, ramis gracillimis teretibus pallidis subteretibus ut videtur glabris, internodiis plerumque brevibus; folia inter minora brevissime petiolata subcoriacea, petiolo crassiusculo 2–4 mm. longo glabro; lamina oblonga vel obovato-oblonga 4–6.5 cm. longa 2.5–3 cm. lata apice rotundata vel late obtusa, basi cuneata, glabra, supra viridis, costa subimpressa, nervis venisque vix obviis, subtus multo pallidior, costa elevata, nervis lateralibus utroque latere ca. 9 vix prominulis fere rectis angulo semirecto adscendentibus, nervis obsoletis, pagina inferiore minute nigro-punctata, margine saepe subrevoluto; flores axillares fasciculati pauci, in axillo 1–3, pedicellis 6–8 mm. longis sericeis rectis vel recurvis, bracteolis ovatis obtusis 1.5 mm. longis adpressis; hypanthium sericeum, sepalis subrotundatis 3 mm. longis apice rotundatis ciliolatis atque sparse sericeis viridescentibus punctatis.—Honduras: In semi-arid woodland near Coyoles, Aguán River Valley, Dept. Yoro, June 28, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8069 (type in Herb. Field Mus.).

The trunk is described as 10 cm. in diameter, the bark as light gray in color.

Eugenia Jambos L. Tree about 9 meters tall. Leaves elliptic-lanceolate, acuminate, somewhat leathery; flowers large, white; fruit fleshy, edible. In forests on the slopes of Mt. Cangrejal, at 150 meters altitude.

Eugenia Koepperi Standl., sp. nov.—Arbor 6–9-metralis, ramulis teretibus griseis vel brunnescentibus, novellis minute brun-

nescenti-sericeis, internodiis brevibus vel elongatis; folia majuscula breviter petiolata subcoriacea, petiolo 4–8 mm. longo crassiusculo minute sericeo vel glabrato; lamina elliptico-oblonga 10–15 cm. longa 4–7 cm. lata acuminata ad late obtusa, apice ipso vulgo obtuso, basi acuta, supra viridis glabra, costa impressa, nervis venisque obsoletis, subtus brunnescens, ubique minute dense sericea, costa gracili elevata, nervis lateralibus utroque latere ca. 13 angulo semirecto adscendentibus tenerrimis obscuris fere rectis; flores axillares brevissime racemosi vel subfasciculati pauci, inflorescentiis petiolis vix longioribus, pedicellis crassiusculis usque 9 mm. longis dense minute brunneo-sericeis, bracteolis rotundato-ovatis obtusis 1.5 mm. longis; calyx minute dense brunneo-sericeus, sepalis suborbicularibus 2.5 mm. longis apice rotundatis punctatis.—Honduras: In forest, slope of Mt. Cangrejal, near La Ceiba, Dept. Atlántida, alt. 180 meters, July 12, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8400 (type in Herb. Field Mus.). In deep forest along Danto River, slopes of Mt. Cangrejal, 360 meters, No. 8749 of the same collectors. Guarunta, Wispernini Camp, Dept. Colón, 22–30 meters, February, 1938, *Christine & Wolfgang von Hagen* 1336.

Eugenia tapirorum Standl., sp. nov.—Arbor 7.5 m. alta ut videtur omnino glabra, ramulis gracilibus teretibus, internodiis brevibus; folia parva breviter petiolata subcoriacea, petiolo 4–5 mm. longo; lamina obovato-oblonga vel oblongo-elliptica 3–5 cm. longa 1–2.2 cm. lata, apice subito breviter cuspidato-acuminata, acumine brevi obtuso, basi anguste vel late cuneato-angustata, supra viridis sublucida, costa impressa, nervis venisque obscuris, subtus paullo pallidior, costa gracili elevata, nervis lateralibus utroque latere ca. 10 tenerrimis obscuris angulo latiusculo adscendentibus fere rectis prope marginem in nervum collectivum conjunctis; flores axillares fasciculati pauci, pedicellis fructiferis crassiusculis usque 5 mm. longis; fructus globosus 9–12 mm. diam. densissime minute glanduloso-tuberculatus.—Honduras: In deep forest along Río Danto, slopes of Mt. Cangrejal, La Ceiba, Dept. Atlántida, alt. 360 meters, July 30, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8700 (type in Herb. Field Mus.).

The foliage resembles somewhat that of *Ficus nitida* Thunb.

MYRCIA DC.

Myrcia Oerstediana Berg. Tree about 5.5 meters tall. Flowers small, white. In forests on the foothills of Mt. Cangrejal, back of La Ceiba.

PSIDIUM L.

Psidium Guajava L. Shrub or small tree about 3.5 meters tall; bark smooth, mottled. Corolla white; fruit the size and color of a small lemon, edible and used in making jelly. Common about La Ceiba.

MELASTOMACEAE

CLIDEMIA Don

Clidemia dentata Don. Shrub about 2 meters tall. Flowers pink; fruit red. In thickets on the lower slopes of Mt. Cangrejal.

CONOSTEGIA Don

Conostegia hondurensis Standl., sp. nov.—Frutex 2-metralis, ramis gracilibus pilis longis apice breviter stellatis dense hirsutis, serius glabratis, internodiis elongatis; folia mediocria petiolata membranacea, petiolo 1–3.5 cm. longo ut rami stellato-piloso; lamina oblongo-elliptica usque ad 19 cm. longa atque 9 cm. lata vel ultra, subabrupte angusteque longiacuminata, basi acuta vel obtusa, supra ubique sat dense hispidula, ad nervos stellato-pilosa, subtus sat dense ubique pilis fulvis apice stellatis breviter hirsuta, prope basin quintuplinervia, margine integro vel paullo undulato; inflorescentia terminalis 1.5 cm. longe pedunculata ca. 5.5 cm. longa et aequilata laxe pauciflora, floribus longipedicellatis, ramis dense pilis apice stellatis hirsutis; fructus juvenilis subglobosus 4 mm. diam. sparse pilis patentibus apice stellatis hirsutus; cetera ignota.—Honduras: Bank of Río Danto, slopes of Mt. Cangrejal, near La Ceiba, Dept. Atlántida, alt. 300 meters, August 6, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8818 (type in Herb. Field Mus.).

The single specimen at hand is in young fruit, and the character of the young calyx therefore not observable. The plant, however, is clearly a *Conostegia*, and I have been unable to associate it with any species recorded for Central America. Most noteworthy is the abundant pubescence of tawny or brownish, spreading hairs, each with a stelliform tuft of short branches at the apex.

Conostegia xalapensis (Bonpl.) Don. Shrub or small tree about 2.5 meters tall. Leaves green above, densely buff-tomentose beneath; flowers pink; fruit dark purple. In thickets, foothills back of La Ceiba.

MICONIA R. & P.

Miconia angustispica Blake. Shrub or small tree about 3.5 meters tall. Leaves large, up to 30 cm. long or more, 3-nerved;

flowers in long, interrupted, spike-like clusters. In ravine, slope near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters.

Miconia dodecandra (Desr.) Cogn. A tree about 5.5 meters high; corolla gray, scurfy. On low bank of Río Salado, near Salado.

Miconia hondurensis D. Sm. Tree about 9 meters tall. Leaves 3-nerved, dark green above, light green beneath; fruit nearly black. In deep forest on the slopes of Mt. Cangrejal, at 300 meters altitude.

Miconia hyperprasina Naud. Small tree or shrub about 3.5 meters tall. Flowers in terminal, paniculate clusters, the pedicels and peduncles red; fruit blue. In thickets, foothills back of La Ceiba.

Miconia impetiolaris (Swartz) Don. Shrub about 3 meters tall. Leaves up to 30 cm. long, obovate, sessile; flowers small, white, in large, terminal, paniculate clusters; fruit red. In forests on the lower slopes of Mt. Cangrejal.

Miconia longifolia DC. Small tree about 4.5 meters tall. Flowers in large, terminal, paniculate clusters, the branches of the inflorescence red; fruit purple. In deep forest along the Danto River, slopes of Mt. Cangrejal, at 300 meters altitude.

Miconia Schlimii Triana. Tree up to 10 meters tall. Flowers white, in comparatively small, paniculate clusters. Young stems, petioles, peduncles, and fruit rusty-brown-pubescent. In forests, slopes of Mt. Cangrejal, at 330 meters altitude; also in a deep ravine on a slope near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

MOURIRIA Aubl.

Mouriria parvifolia Benth. Shrub or small tree about 4.5 meters tall. Leaves ovate-lanceolate, sessile. Flowers and fruit axillary. In forest on the mountain ridge back of Roma, about 25 kilometers east of La Ceiba, at 300 meters altitude.

OSSAEA DC.

Ossaea trichocalyx Pittier. Shrub about 2 meters tall. Leaves elliptic-lanceolate, decurrent at the base, the apex sharply acuminate; fruit bright red. On mountain slope near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

ONAGRACEAE

JUSSIAEA L.

Jussiaea erecta L. Herb about 60 cm. tall. Flowers yellow. In swamps near the seashore, vicinity of La Ceiba.

Jussiaea repens L. var. **peploides** (HBK.) Griseb. Stems fleshy, long, prostrate. Flowers yellow. Creeping in mud and extending out on surface of pools along the Aguán River, near Coyoles.

Jussiaea suffruticosa L. Suffruticose, about 1 meter high. Flowers yellow. Frequent in sandy soil about La Ceiba.

ARALIACEAE

GILIBERTIA R. & P.

Gilibertia arborea (L.) March. Small, glabrous tree up to 7 meters tall. Leaves oval, abruptly acute, up to 18 cm. long, long-petiolate; flowers green, in small umbels which are arranged in a racemose cluster; fruit greenish white. Frequent on the foothills and slopes of Mt. Cangrejal, up to 300 meters altitude. No. 8682 represents a curious, abnormal form of the species, notable for its sessile rather than pedicellate flowers.

ERICACEAE

ANDROMEDA L.

Andromeda mexicana Hemsl. Small tree about 4.5 meters tall and 5 cm. in diameter. Leaves elliptic-lanceolate, acute, somewhat leathery; flowers in axillary clusters. In open forest on rocky mountain slope above the village of Las Flores, at 330 meters altitude.

MYRSINACEAE

ARDISIA Swartz

Ardisia amplifolia Standl. Small tree about 3 meters tall. Flowers yellow, in small umbels which are arranged in paniculate clusters; branches of the flower clusters bright red; fruit red to black. In forests, foothills and slopes of Mt. Cangrejal.

Ardisia compressa HBK. Small, glabrous tree about 3 meters tall. Flowers white, in open, paniculate clusters; branches of the inflorescence bright red; fruit bright red. In forests, lower slopes of Mt. Cangrejal.

Ardisia paschalis D. Sm. Shrub or small tree up to 6 meters tall. Leaves more or less leathery; flowers in branching, racemose clusters; corolla white to pink. Frequent in the semi-arid woodland region about Coyoles.

Ardisia pellucida Oerst. A low shrub less than 1 meter tall. Leaves large, finely and unevenly serrate with spreading teeth;

flowers in dense, corymbose clusters; fruit bluish. In thickets along stream banks on lower slopes of Mt. Cangrejal.

SAPOTACEAE

CALOCARPUM Pierre

Calocarpum mammosum (L.) Pierre. Fine, large tree about 18 meters tall and 1 meter in diameter, with very adhesive latex. Leaves large, obovate, pinnately nerved; flowers sessile, numerous along the branches; fruit subglobose, brown-scurfy, edible. In forests, lower slopes of Mt. Cangrejal.

LUCUMA Molina

Lucuma campechiana HBK. Tree about 9 meters tall. Leaves large, elliptic-oblanceolate; fruit brown, scurfy. In forests, slopes of Mt. Cangrejal, at 330 meters altitude.

LOGANIACEAE

POLYPREMUM L.

Polypremum procumbens L. Low, weedy herb. Flowers very small, greenish white, axillary. On sand bars in the Aguán River, near Coyoles.

SPIGELIA L.

Spigelia Humboldtiana Cham. & Schlecht. Herb up to 60 cm. tall. Flowers white. Occasional in thickets on the lower slopes of Mt. Cangrejal.

APOCYNACEAE

ECHITES Jacq.

Echites turrigera Woodson. Woody, glabrous vine. Leaves oblong-ovate, sharply acute; flowers white. Climbing in trees in semi-arid woodland near Coyoles.

FORSTERONIA Meyer

Forsteronia myriantha D. Sm. Large, glabrous, woody vine, with milky, very adhesive sap. Flowers yellowish; fruit long and slender. Climbing in trees in forests on the lower slopes of Mt. Cangrejal.

Forsteronia spicata (Jacq.) Mey. Shrub or small tree about 3 meters tall. Leaves 10 to 12 cm. long, oval, abruptly acute, densely

and finely pubescent; flowers small, in compact, paniculate spikes. In open, semi-arid woodland region near Las Flores.

MALOUETIA A. DC.

Malouetia guatemalensis (Muell. Arg.) Standl. Small tree up to 9 meters tall; sap abundant, milky. Flowers small, creamy white, in axillary clusters; follicles large, slender. Frequent in forests on the slopes of Mt. Cangrejal, up to 330 meters altitude; also on the ridge back of Roma, about 25 kilometers east of La Ceiba, at 240 meters altitude.

MESECHITES Muell. Arg.

Mesechites trifida (Jacq.) Muell. Arg. Slender, woody vine. Leaves opposite, oval-oblong, acute; follicles 30 cm. long or more, slender; seeds with a tuft of tawny hairs. Climbing in thickets at edge of forest, lower slopes of Mt. Cangrejal.

PLUMERIA L.

Plumeria rubra L. Tree about 10 meters tall; latex milky, abundant; young growth soft and somewhat succulent; older wood very brittle. Leaves large, oblong-elliptic, pinnately nerved, acute; flowers large, showy, white, in large, open, paniculate clusters. In semi-arid woodland region near Coyoles.

PLUMERIOPSIS Rusby & Woodson

Plumeriopsis Ahouai (L.) Rusby & Woodson. Tree about 15 feet tall; leaves obovate; latex white; fruit bright red. In deep forest on the lower slopes of Mt. Cangrejal.

RAUWOLFIA L.

Rauwolfia hirsuta Jacq. Shrub or small tree up to 3.5 meters tall. Leaves and young growth minutely pubescent; flowers small, greenish, in small, cymose clusters; berries red to black. In semi-arid region about Coyoles.

RHABDADENIA Muell. Arg.

Rhabdadenia biflora (Jacq.) Muell. Arg. Woody, glabrous vine. Leaves oblong, opposite, abruptly and sharply pointed; flowers white, in few-flowered, racemose clusters. In sandy soil, thickets near the seashore, vicinity of La Ceiba.

TABERNAEMONTANA L.

Tabernaemontana citrifolia L. Tree about 9 meters tall and 35 cm. in diameter; latex abundant, milky. Flowers creamy white, in cymose clusters; fruits in pairs, divergent, fleshy, pod-like. Frequent in forests on the lower slopes of Mt. Cangrejal.

ASCLEPIADACEAE

ASCLEPIAS L.

Asclepias curassavica L. Herb 60 to 90 cm. tall. Flowers showy, the corolla dark red, the honey horns bright yellow. A frequent weed in open places on the plains and lower slopes about La Ceiba.

FUNASTRUM Fourn.

Funastrum clausum (Jacq.) Schlechter. Herbaceous vine, with slender stems up to 6 meters long or more; sap abundant, milky. Leaves linear-lanceolate, few. Trailing on sandbars in the Aguán River, near Coyoles.

CONVOLVULACEAE

IPOMOEA L.

Ipomoea Pes-caprae (L.) Roth. Smooth, trailing, herbaceous vine. Flowers pinkish purple. Common on sandy beaches near La Ceiba.

Ipomoea stolonifera (Cyrill.) Poir. Smooth, trailing herb. Leaves somewhat fleshy; flowers white. In sand, along ocean beach near Salado, about 20 kilometers west of La Ceiba.

Ipomoea tiliacea (Willd.) Choisy. Herbaceous vine. Flowers purplish. Climbing in thickets near Roma, about 25 kilometers east of La Ceiba.

LYSIOSTYLES Benth.

Lysiostyles sericea Standl. Woody vine. Leaves densely covered beneath with silky hairs; flowers small, greenish. Climbing in thickets on the slopes of Mt. Cangrejal, at 180 meters altitude.

MARIPA Aubl.

Maripa nicaraguensis Hemsl. Large, woody vine. Fruit orange-yellow. In thickets along the Danto River, foothills of Mt. Cangrejal.

QUAMOCLIT Moench

Quamoclit pennata (Desr.) Bojer. Smooth, herbaceous vine. Leaves deeply pinnate-divided, the lobes linear; corolla bright red. Climbing over herbs on sandbars in the Cangrejal River, back of La Ceiba.

BORAGINACEAE

BEURERIA Jacq.

Beureria Wagneri Standl., sp. nov.—Arbor 4.5–7.5 m. alta, ramulis gracilibus subteretibus vel plus minusve compressis cinnamomeis, novellis sparse vel dense laxeque pilosis, internodiis brevibus; folia mediocria breviter petiolata crasse membranacea, petiolo gracili 10–12 mm. longo hirtello; lamina elliptico-oblonga ad vel paullo supra medium latissima acuta vel breviter acuminata, basi acuta, in sicco saepius fusca, supra sublucida ad nervos sparse hirtella vel fere omnino glabra puncticulata, subtus concolor ad costam nervosque sparse hirtella vel fere glabra, costa gracili elevata, nervis lateralibus utroque latere ca. 7 prominentibus angulo latiusculo adscendentibus arcuatis, venulis vix prominulis laxe reticulatis; inflorescentia laxe multiflora breviter vel longiuscule pedunculata usque 5 cm. longa, ramis gracilibus dense albido-hirtellis, floribus in cymas laxas vel subdensas paucifloras dispositis, pedicellis vix ultra 2 mm. longis; calyx anguste campanulatus dense breviter patenti-hirtellus 5 mm. longus superne 3 mm. latus profunde inaequaliter lobatus, lobis ovatis acutis erectis intus sericeis; corolla alba glabra, tubo non exserto 6–7 mm. longo, lobis ovalibus apice rotundatis patentibus aequilongis; stamina longiexserta, antheris linearibus 2.5 mm. longis; fructus ovoideo-globosus glaber 7 mm. diam.—Honduras: In forest, foothills back of La Ceiba, Dept. Atlántida, July 23, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8608 (type in Herb. Field Mus.). Also Nos. 8261 and 8217 from the same locality.

In general appearance as well as in most details this Honduran tree is similar to *B. oxyphylla* Standl., of British Honduras. That lacks the pubescence characteristic of *B. Wagneri*, which is most abundant and persistent upon the inflorescence.

CORDIA L.

Cordia bicolor A. DC. Tree about 7 meters tall and 20 cm. in diameter. Leaves large, oval-oblong, rough, acute, pinnate-nerved; flowers small, in open, paniculate clusters; fruit semi-fleshy. In forests on the lower slopes of Mt. Cangrejal.

Cordia ferruginea (Lam.) R. & S. Shrub about 1 meter tall. Leaves rough; flowers small, greenish white, in spike-like clusters. Common on river bars and foothills back of La Ceiba.

Cordia globosa (Jacq.) HBK. Small shrub about 60 cm. tall. Leaves oval-ovate, about 5 cm. long, pubescent beneath, bristly-scabrous above; flowers small, in globose, head-like clusters. In open, upland, grazing land near the village of Medina, at 180 meters altitude.

Cordia nitida Vahl. Tree about 7 meters tall. Flowers cream-colored, comparatively small, in open, paniculately cymose clusters. Margins of the Danto River, foothills above La Ceiba.

HELIOTROPIUM L.

Heliotropium angiospermum Murr. Weedy herb, about 1 meter tall or less. Flowers white. In sandy soil, waste areas in semi-arid regions about Coyoles.

Heliotropium transalpinum Vell. Weedy herb, about 1 meter tall. Flowers greenish white. In semi-arid woodland region about Coyoles.

TOURNEFORTIA L.

Tournefortia bicolor Swartz. Woody vine. Flowers small, white, in spreading, paniculately cymose clusters; fruit white, fleshy. In forest along the Danto River, slopes of Mt. Cangrejal, at 150 meters altitude.

Tournefortia cuspidata HBK. Woody vine. Young growth, leaves, and inflorescence densely covered with long, erect, brown hairs; leaves elliptic, acuminate; flowers white, in cymose clusters; fruit white. In thickets, margin of Danto River, lower slopes of Mt. Cangrejal.

VERBENACEAE

AEGIPHILA Jacq.

Aegiphila elata Swartz. Scandent shrub. Corolla yellowish white. In thickets on the foothills back of La Ceiba.

CORNUTIA L.

Cornutia grandifolia (Schlecht. & Cham.) Schauer. Small tree about 2.5 meters tall, the branches strongly 4-angled. Leaves densely hairy; flowers violet. In thickets on the foothills back of La Ceiba.

LANTANA L.

Lantana glandulosissima Hayek. Shrub about 1 to 2 meters tall, the stems armed with recurved prickles. Flowers varying from yellow to orange; fruit black. In sandy, alluvial soil near the Aguán River below Coyoles.

Lantana trifolia L. Shrub about 1 meter tall. Flowers varying in color from white or pinkish to violet. In old pastures near the Cangrejal River, foothills back of La Ceiba; also common in semi-arid upland in open areas about the village of Las Flores, at 180 to 300 meters altitude.

PHYLA Lour.

Phyla cuneifolia (Torr.) Greene. Low, creeping herb. Leaves oblong, cuneate, sparingly toothed about the apex; flowers white, in somewhat elongate spikes. On sandbars in the Aguán River, near Coyoles.

Phyla nodiflora var. **reptans** (HBK.) Moldenke. Low, creeping herb. Leaves coarsely toothed; flowers white, in very short, spike-like clusters. In thickets along the Aguán River near Coyoles.

PRIVA Adans.

Priva lappulacea (L.) Pers. Low herb. Flowers pale lavender to purple, in slender, racemose clusters. In thickets along the Aguán River near Coyoles.

STACHYTARPHETA Vahl

Stachytarpheta jamaicensis (L.) Vahl. Herb about 60 cm. tall. Flowers purplish, in stout, spike-like clusters. In sand near the seashore, vicinity of La Ceiba.

VITEX L.

Vitex Gaumeri Greenm. Tree about 15 meters tall and 35 cm. in diameter. Leaves palmately compound, the leaflets densely hairy beneath, entire; flowers small, deep blue, with pleasant odor, in paniculate clusters. In open forests on semi-arid highland near the village of Las Flores, at 180 meters altitude.

Vitex Kuylenii Standl. Small tree about 4.5 meters tall. Leaves palmately compound, the leaflets glabrous; flowers blue, in paniculate clusters. In forests, foothills of Mt. Cangrejal, back of La Ceiba.

LABIATAE

OCIMUM L.

Ocimum micranthum Willd. Weedy herb about 30 cm. tall. Flowers blue. Abundant in upland grazing land near the village of Medina.

TEUCRIUM L.

Teucrium vesicarium Mill. Herb up to 1 meter tall. Flowers white. On banks of irrigation canal, near Coyoles.

SOLANACEAE

CESTRUM L.

Cestrum nocturnum L. Tree about 6 meters tall. Leaves oval-oblong or subovate, sharply acute, entire; flowers greenish, in axillary, racemose clusters. At edge of the forest on the foothills of Mt. Cangrejal, back of La Ceiba.

CYPHOMANDRA Sendtn.

Cyphomandra costaricensis D. Sm. Shrub or small tree about 4.5 meters tall. Leaves broadly ovate, somewhat hirtellous beneath, entire, deeply cordate; fruit about 3 cm. long, ovoid, berry-like. Near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

JUANULLOA R. & P.

Juanulloa mexicana (Schl.) Miers. Stout, woody vine. Leaves oval-obovate, smooth above, densely tomentose beneath with branching hairs; flowers deep orange. Climbing in trees in forests on the slopes of Mt. Cangrejal, at 240 meters altitude.

LYCIANTHES Hassler

Lycianthes heteroclita (Sendtn.) Bitter. Shrub or small tree about 3 meters tall. Leaves large, elliptic, acuminate, drying thin; flowers pale lavender, in axillary clusters. In deep forest along the Danto River, slopes of Mt. Cangrejal, at 300 meters altitude.

Lycianthes lenta (Cav.) Bitter. Shrub or small tree up to 7 meters tall, somewhat scandent. Leaves oval-ovate, acute. Leaves and branches densely pubescent with branching hairs; flowers lavender or purple, in axillary clusters; berries yellow or red. In open forest on rocky mountain slope above Roma, about 25 kilo-

meters east of La Ceiba, at 150 meters altitude; also on the foothills back of La Ceiba.

Lycianthes nitida Bitter. Scandent shrub. Leaves large, elliptic, acute, the base oblique; flowers orange, in axillary clusters. Climbing in trees, forest near the Danto River on the slopes of Mt. Cangrejal, at 240 meters altitude.

Lycianthes quichensis (Coult. & D. Sm.) Bitter. Herbaceous, one meter tall or less. Flowers white, solitary in the leaf axils, on very long pedicels. In sandy soil near the Cangrejal River, foothills back of La Ceiba.

Lycianthes vulpina Standl. Scandent shrub about 3 meters tall. Flowers white, axillary; calyx with slender, filiform, hairy appendages; fruit orange. Stems, leaves, etc. densely hairy, with long, brown, branching hairs. In deep forest near the Danto River on the slopes of Mt. Cangrejal, at 360 meters altitude.

MARKEA L. Rich.

Markea neurantha D. Sm. Tree about 7 meters tall. Leaves alternate, large, elliptic, acute; petioles purple; flowers greenish purple, about 5 cm. long, in racemose clusters at the end of a peduncle 60 cm. long or more. On rocky bank of the Danto River, slopes of Mt. Cangrejal.

PHYSALIS L.

Physalis Lagascae R. & S. Weedy herb. Corolla yellow with brown throat. In waste places about La Ceiba.

SOLANUM L.

Solanum Donnell-Smithii Coult. Woody vine, covered with erect, apically branched hairs and armed with recurved prickles. Leaves with prickles on the midrib and covered with stellate hairs; fruit orange-red. Climbing in trees and shrubs at the edge of the forest, foothills back of La Ceiba.

Solanum nudum HBK. Shrub or small tree 2 to 3 meters tall, glabrous. Leaves elliptic, acute, glabrous; flowers white, in umbellate, lateral clusters; berries black. Common in thickets on the foothills back of La Ceiba; also near the Aguán River, vicinity of Coyoles.

Solanum ochraceo-ferrugineum (Dunal) Fernald. Shrub or small tree about 4.5 meters tall and 5 cm. in diameter. Young

growth and leaves densely covered with stellate hairs; flowers white. In sandy soil in thickets along the Aguán River near Coyoles.

Solanum umbellatum Mill. Shrub or small tree about 6 meters tall. Young growth and leaves densely covered with stalked, stellate hairs; flowers white, in compact, cymose clusters; fruit yellow. In sandy soil, thickets along the Aguán River near Coyoles; also in the foothills back of La Ceiba.

Solanum unguis-cati Standl. Woody vine. Leaves entire or variously lobed. Both leaves and stems armed with recurved prickles; flowers blue, in cymose clusters. Climbing in thickets in semi-arid woodland region near Coyoles.

Solanum verbascifolium L. Shrub or small tree about 3.5 meters tall. Leaves and young growth very densely covered with stalked, stellate hairs; flowers white, in cymose clusters; fruit yellow. In open forests on the ridge back of Roma, about 25 kilometers east of La Ceiba, at 240 meters altitude.

SCROPHULARIACEAE

RUSSELIA Jacq.

Russelia sarmentosa Jacq. Low, half-woody shrub, the stems square in cross section. Leaves opposite, subsessile, ovate, crenate, sparingly pubescent; flowers bright red, in axillary clusters. In semi-arid woodland region near Coyoles.

Russelia verticillata HBK. Herb about 1 meter tall, the stems angled. Leaves opposite or whorled, on very short petioles, ovate-lanceolate, serrate, acuminate; flowers scarlet, in axillary clusters. On a rocky cliff along the Danto River, slopes of Mt. Cangrejal back of La Ceiba.

SCOPARIA L.

Scoparia dulcis L. Low, partially woody herb or shrub. Flowers small, white, solitary or in umbellate, axillary clusters. In sandy soil in thickets near the Aguán River, near Coyoles.

TETRANEMA Benth.

Tetranema mexicanum Benth. Herb about 30 cm. tall. Leaves 10 to 15 cm. long, spatulate, sparingly pubescent, clustered near the top of the stem; flowers violet with purple throat, in few-flowered, cymose clusters on very long, axillary peduncles. On a steep, rocky cliff along the Danto River, slopes of Mt. Cangrejal, at 300 meters altitude. Rare.

BIGNONIACEAE

AMPHITECNA Miers

Amphitecna macrophylla (Seem.) Miers. Tree about 8 meters tall. Flowers white, showy, borne along the trunk. In deep forest on the slopes of Mt. Cangrejal, at about 240 meters altitude. This is believed to be the first record of this species for Honduras.

CLYTOSTOMA Miers

Clytostoma ocositense (D. Sm.) Seibert. Woody vine. Fruit large, covered with spines. Climbing in thicket near La Ceiba.

CYDISTA Miers

Cydista diversifolia (HBK.) Miers. Woody vine. Leaves compound, the leaflets 2, ovate, cordate, acuminate; flowers purplish, 2 to 3 cm. long, showy, in pedunculate, axillary, branching clusters. Climbing in thickets along streams in semi-arid upland near the village of Medina, at 180 meters altitude.

Cydista potosina (Schum. & Loes.) Loes. Large, woody vine. Leaflets 2; flowers 3 to 4 cm. long, white or buff with a purplish or reddish throat, showy. In thickets, foothills back of La Ceiba; also at edge of stream, mountain slope near the village of Las Flores, at 285 meters altitude.

ENALLAGMA Baill.

Enallagma latifolia (Mill.) Small. Tree about 7 meters tall. Leaves oval to obovate, drying firm; fruit globose, about 8 cm. in diameter. In forest on rocky ridge back of Roma, about 25 kilometers east of La Ceiba, at 300 meters altitude.

MARTINELLA Baill.

Martinella verrucosa (Standl.) Standl. Woody vine. Leaves compound, the leaflets 2, large, oval; flowers 4 to 6 cm. long, red or pink, handsome, in branching, axillary clusters. In thickets, margin of the Danto River on the slopes of Mt. Cangrejal.

PARAGONIA Bur.

Paragonia pyramidata (Rich.) Bur. Woody vine. Pods 30 cm. long or more. Climbing in trees, thickets in the foothills back of La Ceiba.

GESNERIACEAE

ACHIMENES P. Br.

Achimenes pulchella (L'Hér.) Hitchc. Herb about 35 cm. tall. Leaves opposite, oval, dentate, pubescent, the veins red beneath; flowers axillary, bright red, on long pedicels. Banks of the Danto River, slopes of Mt. Cangrejal, at 300 meters altitude.

BESLERIA L.

Besleria laxiflora Benth. Low shrub 1 meter tall or less. Flowers orange, in stalked, umbellate, axillary clusters. In forests on the lower slopes of Mt. Cangrejal.

Besleria macrocalyx Morton, sp. nov. (*Eubesleria, Elongatae*).—Frutex ca. 1.5 m. altus, caulibus obtuse quadrangularibus, ca. 4 mm. diam., vix ramosis, praesertim apicem versus hirsutis, pilis pauci-cellularibus, usque ad 2.2 mm. longis; petioli 7–16 mm. longi, hirsuti; lamina foliorum oblique elliptica, 9–14 cm. longa, 3.5–5 cm. lata, apice longe acuminata, basi late cuneata, membranacea, remote et argute serrulata, supra viridis, sparse pilosa, subtus pallidior, praecipue in venis hirsuta, venis primariis ca. 7-jugis; inflorescentia axillaris, umbellata, 3–5-flora, pedunculo communi 10–23 mm. longo, parce hirsuto, pedicellis gracilibus, 15–20 mm. longis, parce hirsutis, apice vix incrassatis; calycis lobi fere aequales, fere liberi, linearilanceolati, 1.8–2.2 cm. longi, basi ca. 4 mm. lati, anguste acuminati, integri, colorati, externe plus minusve in lineam mediam hirsuti, intus glabri; corolla lutea, in calyce erecta, ecalcarata, ca. 1.7 cm. longa, basi vix gibbosa, tubo externe glabro, sursum ventricoso et ca. 6 mm. lato, in fauce paullo contracto, limbo terminali, patulo, lobis oblongis, ca. 4 mm. longis, rotundatis glabris; ovarium et stylus glabri; discus crassus, annularis, glaber.—Honduras: Slopes of Mt. Cangrejal, Department of Atlántida, Honduras, in forest, altitude 150 meters, June to August, 1938, *T. G. Yuncker, J. M. Koepper & K. A. Wagner* 8399 (type in U. S. National Herbarium, No. 1,746,850; duplicate in Herb. Field Mus.).

Most closely related to *Besleria elongata* Urban, of St. Vincent, which differs in having the calyx lobes narrowly ovate and shorter than the corolla. The leaves, moreover, are larger and merely crenate or crenulate, and have more numerous primary nerves. *Besleria Cyrtanthemum* Hanst., of Mexico, is perhaps related also, but that species has an obsolete common peduncle, very short pedicels, and strongly unequal calyx lobes.

CODONANTHE Hanst.

Codonanthe crassifolia (Focke) Morton. Succulent, epiphytic, glabrous herb. Leaves elliptic, acute, about 4 cm. long; flowers white with pale pink stripes on the outside of the corolla; fruit red, fleshy, ovoid-cordate. Pendent from branches of trees on stream banks, foothills back of La Ceiba.

ACANTHACEAE

BLECHUM Juss.

Blechum pyramidatum (Lam.) Urban. Weedy herb. Inflorescence a spike; flowers pale blue, in the axils of large, ovate-orbicular, veiny bracts about 1 cm. long. Near trail in forest on the lower slopes of Mt. Cangrejal.

HYGROPHILA R. Br.

Hygrophila conferta Nees. Low, decumbent herb, half woody at the base. Flowers white, in axillary clusters. On gravel bars in the Cangrejal River, foothills back of La Ceiba.

JUSTICIA L.

Justicia comata (L.) Lam. Low, decumbent herb. Flowers small, white with pink markings, in rather large, terminal, paniculate clusters. In wet soil, margin of the Cangrejal River, foothills back of La Ceiba.

ODONTONEMA Nees

Odontonema cuspidatum (Nees) Kuntze. A half-woody herb or shrub about 1 meter tall. Leaves oval to oblanceolate, acute to acuminate, up to 25 cm. long; flowers about 2.5 cm. long, the tube slender, bright red, in spike-like, racemose clusters. Near the Cangrejal River, foothills back of La Ceiba; also in thickets on the plains back of Roma, about 25 kilometers east of La Ceiba.

Odontonema paniculiferum Blake. Low shrub about 50 cm. tall. Flowers yellow. On rocky mountain slope above Roma, about 25 kilometers east of La Ceiba, at 300 meters altitude.

RUELLIA L.

Ruellia geminiflora HBK. Herb 30 to 35 cm. tall, slightly woody at the base. Leaves about 3 cm. long, oval-ovate, acute, sparingly pubescent; flowers about 5 cm. long, blue, showy. In

open pine forest in rocky soil on mountain slopes above the village of Las Flores, at 330 meters altitude.

Ruellia tuberosa L. Low herb. Leaves mostly basal, obovate-spatulate, finely appressed-pubescent and with scattered, larger, erect hairs on the upper surface; flowers showy, in pedunculate, cymose clusters; corolla lavender, about 2 cm. long. Abundant in open, grassy areas near Coyoles.

THUNBERGIA Retz.

Thunbergia alata Boj. Low, finely pubescent, herbaceous vine. Leaves hastate, the petioles long, winged; flowers solitary, axillary, showy; corollas buff-orange, some with a dark red throat, others lacking the contrasting color. Scrambling over low plants, edges of thickets along the Cangrejal River, foothills back of La Ceiba.

RUBIACEAE

ALIBERTIA A. Rich.

Alibertia edulis (L. Rich.) A. Rich. Shrub or small tree, about 3 meters tall; bark brown, shredded, glabrous. Leaves large, elliptic to oval-ovate, acute; flowers white, subsessile, in terminal, few-flowered clusters; fruit globose, fleshy. In thickets on the banks of the Danto River, slopes of Mt. Cangrejal, at 150 meters altitude.

APPUNIA Hook. f.

Appunia guatemalensis D. Sm. Glabrous shrub about 1.5 meters tall. Flowers purplish without, white within, sessile in stalked, axillary clusters; fruit small, fleshy, purplish. In thickets on the foothills back of La Ceiba. This is the first report of this genus for Honduras.

BORRERIA Meyer

Borreria laevis (Lam.) Griseb. Low herb, slightly woody at the base. Leaves sessile, about 2 cm. long, narrowly elliptic-lanceolate, glabrous; flowers small, pale pink, sessile, in axillary clusters. In sandy soil along the Aguán River near Coyoles.

CALYCOPHYLLUM DC.

Calycophyllum candidissimum (Vahl) DC. Tree about 9 meters tall and 20 cm. in diameter. Flowers white, numerous, in large, corymbose-paniculate clusters; capsule about 1 cm. long. In open woodland near the village of Medina, at 180 meters altitude.

CEPHAELIS Swartz

Cephaelis tomentosa (Aubl.) Vahl. Half-woody, densely hairy shrub about 1 meter tall. Leaves 15 cm. long or more, ovate, pinnately nerved, with the lateral nerves curving upward; flowers yellow, in stalked, head-like clusters subtended by two large, bright red bracts. In thickets on the lower slopes of Mt. Cangrejal.

COCCOCYPSELUM P. Br.

Coccocypselum herbaceum Lam. Low, trailing, finely pubescent, somewhat succulent herb. Leaves 3 to 4 cm. long, ovate, the nerves beneath and petioles pink; flowers small, in axillary clusters. In open areas in the foothills back of La Ceiba.

DECLIEUXIA HBK.

Declieuxia fruticosa (Willd.) Kuntze, var. **mexicana** (HBK.) Standl. Herb 30 to 60 cm. tall, slightly woody at the base; stem with narrow, wing-like, longitudinal ridges. Leaves linear, sessile, somewhat leathery; flowers small, white, in cymose clusters. In rocky soil in pine forest on the mountain slope above the village of Las Flores, at 330 meters altitude.

GENIPA L.

Genipa Caruto HBK. Tree about 15 meters tall and 40 cm. in diameter. Leaves large, drying dark and shiny above, light and finely pubescent beneath; flowers large, yellow, fragrant, in terminal, cymose clusters; fruit large, round, fleshy, edible. In open forest, semi-arid upland near the village of Medina, at 180 meters altitude.

GEOPHILA Don

Geophila herbacea (L.) Schum. Prostrate herb. Leaves rounded-cordate; flowers small, white, sessile, in stalked, axillary clusters; fruit fleshy, red. Frequent in moist, shady areas, foothills back of La Ceiba.

GUETTARDA L.

Guettarda macrosperma D. Sm. Shrub or small tree about 4.5 meters tall. Leaves appressed-pubescent; flowers in stalked, axillary, cymose clusters, the corolla 4- or 5-parted, white, the tube about 1.5 cm. long, finely appressed-pubescent outside. In thickets, foothills back of La Ceiba.

HAMELIA Jacq.

Hamelia longipes Standl. Small tree about 4.5 meters tall. Leaf nerves and petioles reddish; flowers in open, terminal, racemose cymes, the corolla yellow, the peduncles and pedicels red; berries red to black. In thickets on the banks of the Danto River, slopes of Mt. Cangrejal, at 240 meters altitude; also on the ridge back of Roma, about 25 kilometers east of La Ceiba.

Hamelia nodosa Mart. & Gal. Shrub about 2 meters tall. Leaves large, oval, acute; flowers in large, open, terminal, racemose cymes. In thickets, plains back of La Ceiba.

Hamelia Rovirosae Wernh. Shrub or small tree up to 4.5 meters tall. Leaves opposite or commonly whorled; flowers in terminal, one-sided, cymosely arranged spikes; corollas 2 cm. long or more, red, showy; fruit red. In foothills back of La Ceiba; also on bank of the Salado River, about 20 kilometers west of La Ceiba.

HEMIDIODIA Schum.

Hemidiodia ocimifolia (Willd.) Schum. Herb. Leaves veiny, lanceolate; flowers white, sessile in axillary clusters. In wet soil near the trail on the lower slopes of Mt. Cangrejal, back of La Ceiba.

HOFFMANNIA Swartz

Hoffmannia hondurensis Standl. Shrub about 2 meters tall. Flowers small, cream-colored, in axillary clusters, the pedicels salmon. In deep, moist ravine on slope near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

MORINDA L.

Morinda panamensis Seem. Small tree about 3.5 meters tall. Flowers small, white, clustered in stalked heads; fruit fleshy. In the foothills back of La Ceiba.

PALICOUREA Aubl.

Palicourea crocea (Swartz) R. & S. Shrub or small tree about 4.5 meters tall. Flowers in paniculate, terminal clusters; corolla orange-yellow; pedicels and peduncles dark orange to red; fruit black. In forests on the lower slopes of Mt. Cangrejal.

PENTAGONIA Benth.

Pentagonia Donnell-Smithii Standl. Tree about 7 meters tall and 20 cm. in diameter, the wood soft. Leaves very large, up

to 90 cm. long and 50 cm. wide, obovate, acute; flowers in axillary, paniculate clusters; fruit globose, somewhat fleshy. In forests on the mountain range back of Roma, about 25 kilometers east of La Ceiba, at 300 meters altitude.

PSYCHOTRIA L.

Psychotria brachiata Swartz. Shrub or small tree about 4.5 meters tall. Flowers small, sessile, yellow, in terminal, paniculate clusters; fruit blue. In forest, foothills back of La Ceiba.

Psychotria carthaginensis Jacq. Shrub about 3 meters tall, glabrous. Leaves more or less shiny, elliptic-obovate, acute, short-petioled; flowers small, white, on whitish pedicels in terminal, paniculate clusters. In ravine in semi-arid woodland region near Coyoles.

Psychotria chiapensis Standl. Tree about 7 meters tall. Leaves elliptic to obovate, up to 20 cm. long or more; flowers white, in terminal, paniculate clusters; fruit up to 15 mm. long, globose, green. In forest on the banks of the Danto River, slopes of Mt. Cangrejal.

Psychotria crebrinervia Standl. Shrub or small tree about 4.5 meters tall, the small branches commonly hollow. Leaves 20 cm. long or more, acuminate; flowers small, cream-colored, numerous, in large, terminal, paniculate clusters. In thickets on the foothills back of La Ceiba; also in open forest on the ridge back of Roma, about 25 kilometers east of La Ceiba, at 270 meters altitude.

Psychotria cuspidata Bredem. Shrub or small tree about 4.5 meters tall. Leaves elliptic-lanceolate, acuminate, cuspidate, glabrous. Flowers white, in terminal, paniculate clusters; fruit becoming black. In forests on the slope back of Roma, about 25 kilometers east of La Ceiba, at 300 meters altitude.

Psychotria graciliflora Benth. Shrub about 1 meter tall. Leaves elliptic-oblanceolate, acuminate; flowers cream-colored, in paniculate clusters terminal on side branches; fruit red. On river banks, foothills back of La Ceiba.

Psychotria grandis Swartz. Tree about 6 meters tall. Leaves large, up to 30 cm. long, elliptic-obovate, acute; flowers white, in long-stalked, large, paniculate clusters; fruit reddish. In thickets on the plains near Roma, about 25 kilometers east of La Ceiba.

Psychotria involucrata Swartz. Shrub or small tree about 3.5 meters tall. Leaves glabrous, elliptic, acuminate; flowers small,

white, in small, compact, head-like clusters with numerous rather large, reddish bracts. On low ground near the Salado River, about 20 kilometers west of La Ceiba.

Psychotria limonensis Krause. Shrub about 2 meters tall. Leaves large, elliptic, acute; flowers numerous, small, white, in short-stalked, terminal, paniculate clusters. In thickets, lower slopes of Mt. Cangrejal.

Psychotria marginata Swartz. Shrub or small tree about 3 meters tall. Leaves elliptic-oblanceolate, acuminate, glabrous; flowers greenish, in loose, terminal, paniculate clusters; fruit ribbed, globose, red. In forests on the slopes of Mt. Cangrejal.

Psychotria microdon (DC.) Urban. Shrub or small tree about 3 meters tall. Leaves comparatively small, mostly 4 to 6 cm. long, glabrous; flowers greenish white, in very small, paniculate clusters, terminal on lateral branches. In open forest near the village of Las Flores.

Psychotria Oerstediana Standl. Low shrub about 1 meter tall. Leaves elliptic- or oval-obovate, acute to acuminate; flowers white, in subsessile, paniculate clusters, terminal on the branches. Frequent in thickets along the Cangrejal River, foothills back of La Ceiba; also in semi-arid woodland region near Coyoles.

Psychotria patens Swartz. Shrub or small tree about 3 meters tall. Leaves elliptic-lanceolate, attenuate-acuminate, glabrous; flowers white, in elongate, terminal, paniculate clusters, the pedicels and peduncles purplish; fruit wine-colored to bluish. In thickets on the lower slopes of Mt. Cangrejal.

Psychotria pubescens Swartz. Shrub or small tree up to 6 meters tall. Leaves elliptic, acuminate, finely pubescent beneath, particularly along the midrib, the veins often reddish; flowers greenish yellow, small, in terminal, stalked, paniculate clusters; fruit purple. In thickets, foothills back of La Ceiba; also in thickets in semi-arid upland region near the village of Las Flores, at 240 meters altitude.

Psychotria sessilifolia Mart. & Gal. Shrub about 1 meter high or less; leaves elliptic, minutely pubescent beneath, at least along the nerves; flowers small, in sessile, terminal, paniculate clusters. In thickets in semi-arid upland region near the village of Medina, at 200 meters altitude.

Psychotria suerrensis D. Sm. Small tree about 4.5 meters tall. Leaves elliptic-lanceolate, 12 to 18 cm. long, long-acuminate,

nearly glabrous; flowers white, in compact, axillary clusters. In deep forest along the Danto River, slopes of Mt. Cangrejal, at 300 meters altitude.

Psychotria undata Jacq. Shrub about 2.5 meters tall, the young growth hairy. Leaves elliptic-obovate, acuminate, hairy on both surfaces; flowers small, in sessile, terminal, paniculate clusters; fruit hairy. Bank of stream on slope above the village of Las Flores, at 300 meters altitude.

RICHARDIA L.

Richardia scabra L. A low, hairy, weedy herb. Flowers white, in terminal, head-like, bracteate clusters. In sand near the seashore, vicinity of La Ceiba.

RONDELETIA L.

Rondeletia stachyoidea D. Sm. Small tree about 4.5 meters tall. Leaves elliptic-lanceolate, more or less drooping, long-tapering at both ends, silky-hairy beneath; flowers in elongate, paniculate, spike-like clusters. In forests on the foothills back of La Ceiba.

SOMMERA Schlecht.

Sommera grandis (Bartl.) Standl. Tree about 9 meters tall and 15 cm. in diameter. Leaves elliptic-obovate, abruptly pointed, glabrous above, hairy beneath; flowers white, in few-flowered, stalked, axillary clusters; fruit hairy. In forests on the lower slopes of Mt. Cangrejal, at 180 meters altitude.

CUCURBITACEAE

LUFFA Adans.

Luffa cylindrica (L.) Roem. Herbaceous vine. Leaves large, palmately lobed, scabrous; flowers yellow. Climbing in thickets on the plains near La Ceiba.

MOMORDICA L.

Momordica Charantia L. Slender, herbaceous vine. Leaves thin, deeply palmate-lobed, the lobes toothed; flowers yellow; fruit fusiform, rough, yellow, its seeds imbedded in a red, pulpy interior which is exposed at maturity by the splitting of the fruit. Climbing in thickets near the Aguán River, vicinity of Coyoles, and elsewhere. Common.

SICYDIUM Schlecht.

Sicydium tamnifolium (HBK.) Cogn. Herbaceous vine. Leaves ovate-cordate, acute, pubescent or scabrous; flowers small,

greenish, in open, paniculate clusters; fruit dark blue. On lower slopes of Mt. Cangrejal, back of La Ceiba; also in open, semi-arid, cut-over area near the village of Medina.

LOBELIACEAE

ISOTOMA Lindl.

Isotoma longiflora (L.) Presl. Herb 30 cm. tall or less, pubescent. Leaves oblanceolate, toothed, the teeth with spinose tips; flowers white, long-tubular, axillary. Said to be poisonous. Abundant locally on the plains near Roma, about 25 kilometers east of La Ceiba.

LOBELIA L.

Lobelia splendens Willd. Herb about 60 cm. tall. Flowers cardinal red. Occasional on sandbars in the Aguán River near Coyoles.

COMPOSITAE

AGERATUM L.

Ageratum conyzoides L. A weedy, pubescent herb up to 60 cm. tall. Flowers light blue. Abundant in moist areas on the plains and in thickets about La Ceiba.

BIDENS L.

Bidens pilosa L. var. **radiata** Sch. Bip. Tall, weedy herb. Ray flowers white, the disk yellow. A common plant throughout the region about La Ceiba.

CHAPTALIA Vent.

Chaptalia nutans (L.) Polak. Low, stemless herb. Leaves oblong-obovate, densely tomentose beneath, basal, forming a rosette; flower heads on scapes up to 60 cm. tall, the rays dark red. Frequent in open areas about La Ceiba.

CLIBADIUM Allem.

Clibadium polygynum Blake. Herb, or more or less woody, 1.5 meters tall. Leaves ovate-lanceolate, opposite, acuminate; heads whitish, numerous, in paniculately cymose clusters. On the banks of the Danto River, slopes of Mt. Cangrejal, at 240 meters altitude.

ECLIPTA L.

Eclipta alba (L.) Hassk. Low, weedy herb with rough pubescence. Leaves linear-lanceolate, opposite; heads small, the rays

very small, whitish. In marshy areas along the seashore near La Ceiba.

ERECHTITES Raf.

Erechtites hieraciifolia (L.) Raf. Herb about 60 cm. tall. Leaves lanceolate, pinnately lobed or deeply sharp-toothed; heads greenish yellow; pappus of profuse, white hairs. In waste areas near La Ceiba.

ERIGERON L.

Erigeron bonariensis L. Herb about 1 meter tall. Leaves linear-oblanceolate; heads greenish white; pappus of tan-colored bristles. On banks of the Danto River, lower slopes of Mt. Cangrejal.

Erigeron canadensis L. Herb about 1 meter tall. Heads whitish. A widely distributed, weedy plant, common in waste places about La Ceiba.

EUPATORIUM L.

Eupatorium albicaule Sch. Bip. Shrub or small tree up to 7 meters tall and 20 cm. in diameter, sometimes more or less scandent. Leaves elliptic-lanceolate, toothed, 3-nerved from near the base; flowers white; pappus whitish. In thickets on the lower slopes of Mt. Cangrejal; also in semi-arid woodland region near Coyoles.

Eupatorium amygdalinum Lam. Glabrous herb about 1 meter tall. Leaves elliptic-oblong, entire, somewhat leathery, the midvein prominent; flowers pale lavender; heads arranged in large, corymbose clusters. In open forest in semi-arid upland region near the village of Las Flores, at 300 meters altitude.

Eupatorium Carletonii Robinson. Low, decumbent, glabrous herb. Leaves pinnately dissected, the divisions narrowly linear and more or less divided towards the outer ends. Flowers rose or lavender; involucral bracts linear-oblong; pappus bristles tan-colored; heads small, in loose, paniculate clusters. On rocky cliffs near the Danto River, slopes of Mt. Cangrejal, at 300 meters altitude.

Eupatorium macrophyllum L. Herb about 1 meter tall, finely pubescent, somewhat woody toward the base. Leaves ovate, pubescent; flowers white; pappus bristles white. At edges of thickets in foothills back of La Ceiba.

LYCOSERIS Cass.

Lycoseris crocata (Bertol.) Blake. Woody vine. Leaves elliptic-lanceolate, densely tomentose beneath, finely but sparingly

toothed. Heads large, solitary, terminal on the branches. In thickets along a stream near the village of Las Flores, at 240 meters altitude.

MELANTHERA Rohr

Melanthera nivea (L.) Small. Herb, more or less woody at the base, about 1 meter tall. Leaves ovate, acuminate, scabrous. Heads small, long-stalked, commonly solitary; disk scaly, the scales very sharp-pointed; flowers white. Sandy beach near the village of Salado, about 20 kilometers west of La Ceiba; also on bank of stream in the foothills back of La Ceiba.

NEUROLAENA R. Br.

Neurolaena lobata (L.) R. Br. Herb about 1 meter tall. Leaves scabrous, coarsely serrate or the larger leaves three-lobed, the midrib prominent; heads yellow, in corymbose clusters. In thickets on slope near Puente Alto, about 50 kilometers east of La Ceiba, at 240 meters altitude.

PLUCHEA Cass.

Pluchea purpurascens (Swartz) DC. Densely pubescent herb about 1 meter tall. Leaves ovate-oblong, acutish, the midrib prominent; heads pink, in corymbose clusters. In marsh near the seashore, vicinity of La Ceiba.

POLYMNIA L.

Polymnia maculata Cav. Weedy herb about 2 meters tall. Leaves large, more or less scabrous, opposite, coarsely toothed, the upper ones ovate-lanceolate, the lower broadly orbicular-ovate; heads rather large, in few-headed clusters; rays conspicuous, yellow. Growing in great abundance in a coconut grove near La Ceiba.

POROPHYLLUM Adans.

Porophyllum punctatum (Mill.) Blake. Erect herb about 1.5 meters tall, the stems red. Leaves about 2 cm. long, elliptic-oblong, acute; heads narrow, solitary, on slender stalks at the ends of branches; corollas yellowish; pappus tawny. In sandy soil, thickets along the Aguán River near Coyoles.

SCHISTOCARPHA Less.

Schistocarpha oppositifolia (Klatt) Rydb. Erect herb about 1 meter tall. Leaves large, ovate, shallowly toothed; heads in paniculately corymbose clusters; flowers yellowish; pappus hairs

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tawny; involucral bracts thin and papery. In thickets on slope near Puente Alto, east of La Ceiba, at 850 feet altitude.

SENECIO L.

Senecio kermesinus Hemsl. Large, glabrous, woody vine. Leaves alternate, with few very small teeth, elliptic-oblong, acute to acuminate; heads handsome, long-stalked, in few-headed umbellate clusters; flowers deep orange, fragrant; pappus white. In thickets about La Ceiba.

TITHONIA Desf.

Tithonia Pittieri (Greenm.) Blake. Shrub or small tree about 4.5 meters tall, the stems hairy. Leaves linear-lanceolate, long-acuminate, densely pubescent beneath, rough-scabrous above; heads rather large, mostly solitary at the ends of the branches; rays yellow. On margin of old irrigation ditch near Coyoles.

TRIDAX L.

Tridax procumbens L. Low, decumbent, hairy herb. Leaves small, toothed, scabrous; heads on long peduncles; rays white; pappus bristles plumose. On gravel bars in the Aguán River near Coyoles.

VERBESINA L.

Verbesina sublobata Benth. Shrub or small tree about 3 meters tall, the young stems densely tomentose. Leaves alternate, deeply pinnate-lobed, decurrent on the petiole, moderately pubescent above with short, erect, semi-rigid hairs, brown-tomentose beneath. In thickets on slope near Puente Alto, east of La Ceiba, at 250 meters altitude.

VERNONIA Schreb.

Vernonia scorpioides (Lam.) Pers. Herb 1.5 meters tall or less, sometimes somewhat woody at the base, densely pubescent with soft, brown hairs. Leaves alternate, ovate, acuminate, densely pubescent. Heads small, pink or lavender, showy, sessile on branching, one-sided, scorpioid spikes; pappus bristles white. Very abundant in open, sunny places about La Ceiba.

WEDELIA Jacq.

Wedelia trilobata (L.) Hitchc. A creeping herb. Leaves opposite, sessile, chiefly 3-lobed above the middle, narrowing toward the base; heads large, mostly solitary, long-pedunculate; rays yellow. In sand near the seashore, vicinity of La Ceiba.

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